Washington State
Department of Transportation
Olympia, Washington 98504

SR 005
SEATTLE
ENHANCED RAMP METERING
22A049
King County

Notice to All Planholders

The Engineer assigned to answer questions regarding these bid documents, show this project to prospective bidders, and act as the Contracting Agency's representative who directly supervises the engineering and administration of this project is:

James Harper, P.E.
6431 Corson Ave S
Seattle, WA 98108-3445
(206) 768-5601
James.Harper@wsdot.wa.gov

Mark Gaines, P.E.
State Design Engineer

As the Engineer in direct responsible charge of developing these contract provisions, I certify these provisions have been developed or incorporated into this project under my supervision or as a result of certified specifications provided by other licensed professionals.

SR 005
SEATTLE
ENHANCED RAMP METERING
22A049

INDEX

SHEET NO.	PLAN REFERENCE NO.	TITLE
1	IN1	INDEX
2	CT1	CERTIFICATION SHEET
3	VM1	VICINITY MAP
4	SQ1	SUMMARY OF QUANTITIES
5 - 7	EC1 - EC3	TESC PLAN
8 - 16	IT1 - IT9	ITS AND SIGNING PLAN
17 - 26	ITD1 - ITD10	ITS DETAILS
27	SS1	SIGN SPECIFICATIONS
28	SD1	SIGN DETAILS
29 - 36	TC1 - TC8	TRAFFIC CONTROL PLAN
37 - 43	DU1 - DU7	DETOUR PLAN

PLAN REFERENCE NO.	
SHEET OF SHEETS	

NOTE: ALL SHEET REFERENCES, FIRST NOS. OF STRUCTURE CODE DESIGNATIONS AND MATCH LINE SHEET REFERENCES, ETC., THROUGHOUT THE PLANS, REFER TO THE ENTRY IN THE PLAN REFERENCE NUMBER BOX.

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_IN.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	11:43:39 AM				10	WASH	
DATE	3/16/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

INDEX

Plot 1

PLAN REF NO
IN1

SHEET 1 OF 43 SHEETS

PROJECT LICENSED PROFESSIONAL CERTIFICATES

Christian Santiago Christian Santiago Mar 27, 2023 AS A LICENSED PROFESSIONAL IN DIRECT RESPONSIBLE CHARGE OF DEVELOPING THIS CONTRACT, I CERTIFY THAT ALL PLANS THAT CONTAIN MY STAMP HAVE BEEN DEVELOPED UNDER MY SUPERVISION.	Michael Forbis Michael Forbis (Mar 28, 2023 06:58 PDT) Michael Forbis Mar 28, 2023 AS A LICENSED PROFESSIONAL IN DIRECT RESPONSIBLE CHARGE OF DEVELOPING THIS CONTRACT, I CERTIFY THAT ALL PLANS THAT CONTAIN MY STAMP HAVE BEEN DEVELOPED UNDER MY SUPERVISION.	AS A LICENSED PROFESSIONAL IN DIRECT RESPONSIBLE CHARGE OF DEVELOPING THIS CONTRACT, I CERTIFY THAT ALL PLANS THAT CONTAIN MY STAMP HAVE BEEN DEVELOPED UNDER MY SUPERVISION.	AS A LICENSED PROFESSIONAL IN DIRECT RESPONSIBLE CHARGE OF DEVELOPING THIS CONTRACT, I CERTIFY THAT ALL PLANS THAT CONTAIN MY STAMP HAVE BEEN DEVELOPED UNDER MY SUPERVISION.
AS A LICENSED PROFESSIONAL IN DIRECT RESPONSIBLE CHARGE OF DEVELOPING THIS CONTRACT, I CERTIFY THAT ALL PLANS THAT CONTAIN MY STAMP HAVE BEEN DEVELOPED UNDER MY SUPERVISION.	AS A LICENSED PROFESSIONAL IN DIRECT RESPONSIBLE CHARGE OF DEVELOPING THIS CONTRACT, I CERTIFY THAT ALL PLANS THAT CONTAIN MY STAMP HAVE BEEN DEVELOPED UNDER MY SUPERVISION.	AS A LICENSED PROFESSIONAL IN DIRECT RESPONSIBLE CHARGE OF DEVELOPING THIS CONTRACT, I CERTIFY THAT ALL PLANS THAT CONTAIN MY STAMP HAVE BEEN DEVELOPED UNDER MY SUPERVISION.	AS A LICENSED PROFESSIONAL IN DIRECT RESPONSIBLE CHARGE OF DEVELOPING THIS CONTRACT, I CERTIFY THAT ALL PLANS THAT CONTAIN MY STAMP HAVE BEEN DEVELOPED UNDER MY SUPERVISION.
AS A LICENSED PROFESSIONAL IN DIRECT RESPONSIBLE CHARGE OF DEVELOPING THIS CONTRACT, I CERTIFY THAT ALL PLANS THAT CONTAIN MY STAMP HAVE BEEN DEVELOPED UNDER MY SUPERVISION.	AS A LICENSED PROFESSIONAL IN DIRECT RESPONSIBLE CHARGE OF DEVELOPING THIS CONTRACT, I CERTIFY THAT ALL PLANS THAT CONTAIN MY STAMP HAVE BEEN DEVELOPED UNDER MY SUPERVISION.	AS A LICENSED PROFESSIONAL IN DIRECT RESPONSIBLE CHARGE OF DEVELOPING THIS CONTRACT, I CERTIFY THAT ALL PLANS THAT CONTAIN MY STAMP HAVE BEEN DEVELOPED UNDER MY SUPERVISION.	AS A LICENSED PROFESSIONAL IN DIRECT RESPONSIBLE CHARGE OF DEVELOPING THIS CONTRACT, I CERTIFY THAT ALL PLANS THAT CONTAIN MY STAMP HAVE BEEN DEVELOPED UNDER MY SUPERVISION.

NOTES:

THIS PLAN SET WAS DEVELOPED ELECTRONICALLY UNDER THE DIRECT SUPERVISION OF THE LICENSED PROFESSIONALS THAT HAVE AFFIXED THEIR SIGNATURE TO THIS PAGE.

THIS SHEET SERVES AS THE CERTIFICATION BY THE ABOVE LICENSED PROFESSIONALS OF ALL SHEETS IN THIS PLAN SET WHERE THEIR STAMPS AND SIGNATURES APPEAR.

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_CT.dgn
TIME	11:43:40 AM
DATE	3/16/2023
PLOTTED BY	rockz
DESIGNED BY	Z. ROCK
ENTERED BY	Z. ROCK
CHECKED BY	C. WOO
PROJ. ENGR.	C. SANTIAGO
REGIONAL ADM.	B. NIELSEN

REVISION | DATE | BY

REGION NO.	STATE	FED.AID PROJ.NO.
10	WASH	
JOB NUMBER 22A049		
CONTRACT NO.		LOCATION NO.

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

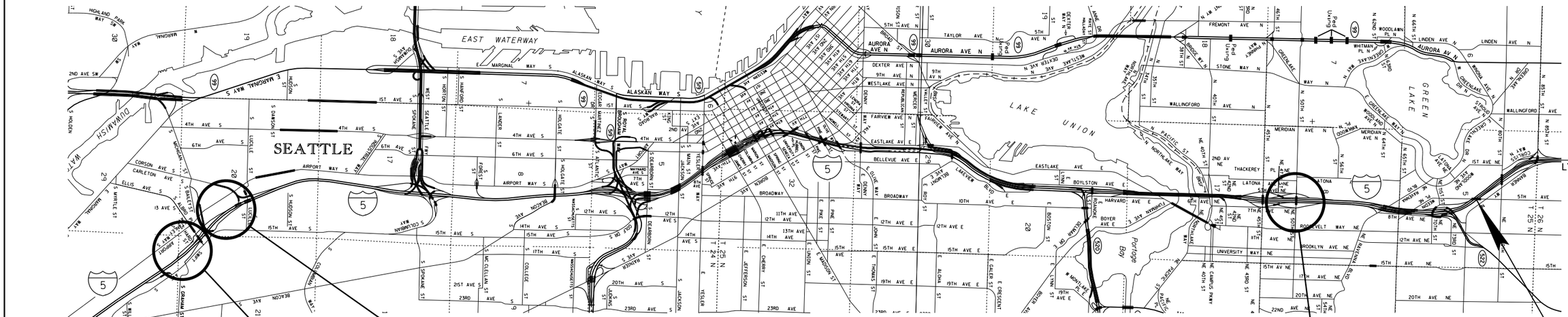
CERTIFICATION SHEET

Plot 1

PLAN REF NO CT1

SHEET 2 OF 43 SHEETS

CITY OF SEATTLE



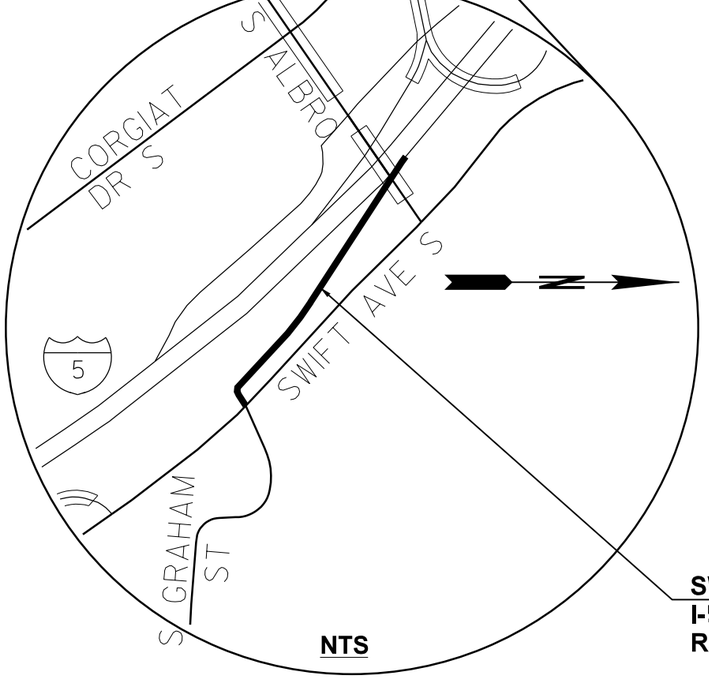
NOTE:

1. SEE DETOUR PLAN SHEETS DU1-DU7.

0 2000 4000
SCALE IN FEET

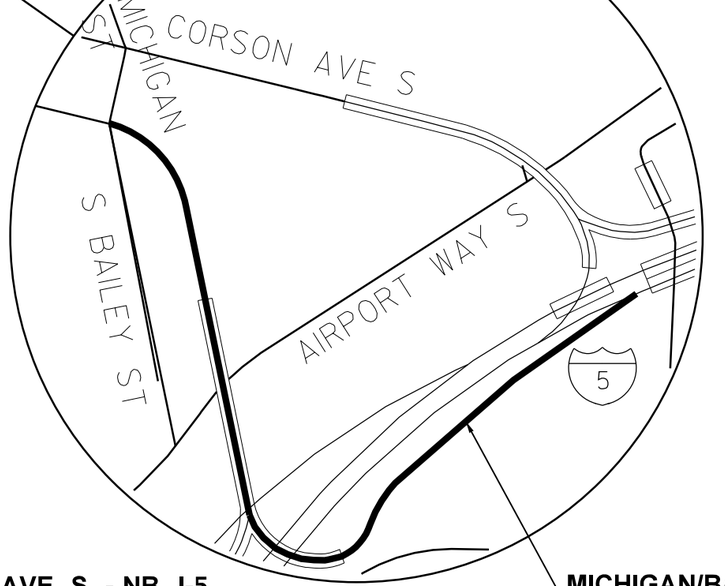
BEGIN PROJECT
I-5 MP 160.00

END PROJECT
I-5 MP 171.00



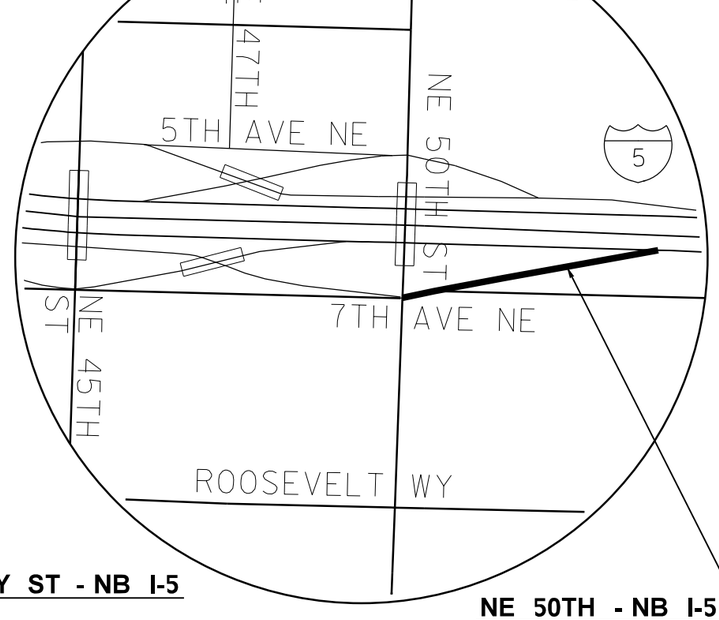
NTS

SWIFT AVE S - NB I-5
I-5, MP 161.39
RAMP (005Q116139)



NTS

MICHIGAN/BAILEY ST - NB I-5
I-5, MP 161.77
RAMP (005Q116177)



NTS

NE 50TH - NB I-5
I-5, MP 169.86
RAMP (005Q116986)

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_VM.dgn						
TIME	11:44:08 AM				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
DATE	3/16/2023						
PLOTTED BY	rockz				JOB NUMBER 22A049		
DESIGNED BY	Z. ROCK						
ENTERED BY	Z. ROCK				CONTRACT NO.	LOCATION NO.	
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

DATE
P.E. STAMP BOX

DATE
P.E. STAMP BOX

Washington State
Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

VICINITY MAP

Plot 1
PLAN REF NO VM1
SHEET 3 OF 43 SHEETS

SUMMARY OF QUANTITIES

DOT_RGG900

2/27/2023

ITEM NO	TOTAL QUANTITY	SUB-TOTAL * SECTION I-07.2(1) OF STANDARD SPECS	SUB-TOTAL ** SECTION I-07.2(2) OF STANDARD SPECS	STD. ITEM NO.	UNIT	ITEM	GROUP 1 I-5 NB ON-RAMP @ SWIFT AVE S	GROUP 1 I-5 NB ON-RAMP @ S BAILEY ST	GROUP 1 I-5 NB ON-RAMP @ NE 50TH ST	GROUP 2 THIRD PARTY DAMAGES
						PREPARATION				
1	LUMP SUM		LUMP SUM	0001	L.S.	MOBILIZATION	L.S.	L.S.	L.S.	
2	LUMP SUM		LUMP SUM	0035	L.S.	CLEARING AND GRUBBING	L.S.	L.S.		
3	4500.00		4500.00	0257	DOL	REMOVING TRAFFIC SIGNAL SHAFT OBSTRUCTIONS	1,500.00	1,500.00	1,500.00	
						EROSION CNTL AND ROADSIDE RESTORATION				
4	9.00		9.00	6403	DAY	ESC LEAD	3.00	4.00	2.00	
5	170.00		170.00	6453	S.Y.	COMPOST BLANKET	24.00	92.00	54.00	
6	10.00		10.00	6471	EACH	INLET PROTECTION	4.00	3.00	3.00	
7	9500.00		9500.00	6490	DOL	EROSION/WATER POLLUTION CONTROL	2,500.00	5,000.00	2,000.00	
8	170.00		170.00	6419	S.Y.	SEEDING AND FERTILIZING BY HAND	24.00	92.00	54.00	
9	135.00		135.00	6630	L.F.	HIGH VISIBILITY FENCE		65.00	70.00	
						TRAFFIC				
10	LUMP SUM		LUMP SUM	6890	L.S.	PERMANENT SIGNING	L.S.	L.S.	L.S.	
11	LUMP SUM		LUMP SUM		L.S.	TRAFFIC DATA ACCUMULATION & RAMP METERING SYSTEM MOD-1	L.S.			
12	LUMP SUM		LUMP SUM		L.S.	TRAFFIC DATA ACCUMULATION & RAMP METERING SYSTEM MOD-2		L.S.		
13	LUMP SUM		LUMP SUM		L.S.	TRAFFIC DATA ACCUMULATION & RAMP METERING SYSTEM MOD-3			L.S.	
14	LUMP SUM		LUMP SUM	6971	L.S.	PROJECT TEMPORARY TRAFFIC CONTROL	L.S.	L.S.	L.S.	
15	25000.00		25000.00	7572	DOL	WORK ZONE SAFETY CONTINGENCY	8,000.00	10,000.00	7,000.00	
						OTHER ITEMS				
16	LUMP SUM		LUMP SUM	7038	L.S.	ROADWAY SURVEYING	L.S.	L.S.	L.S.	
17	24000.00		24000.00	7715	DOL	FORCE ACCOUNT MINOR ELECTRICAL REPAIR WORK	8,000.00	8,000.00	8,000.00	
18	4500.00		4500.00	7480	DOL	ROADSIDE CLEANUP	1,500.00	1,500.00	1,500.00	
19	5.00		5.00	7725	DOL	REIMBURSEMENT FOR THIRD PARTY DAMAGE				5.00
20	-1.00		-1.00	7728	DOL	MINOR CHANGE	-1.00			
21	-1.00		-1.00	7732	DOL	AGGREGATE COMPLIANCE PRICE ADJUSTMENT	-1.00			
22	LUMP SUM		LUMP SUM	7736	L.S.	SPCC PLAN	L.S.	L.S.	L.S.	
23	2.00		2.00	7569	EACH	NO TRESPASSING SIGN			2.00	
24	LUMP SUM		LUMP SUM	7570	L.S.	HEALTH AND SAFETY PLAN			L.S.	
25	15000.00		15000.00	7571	DOL	FA-SITE CLEANUP OF BIO. AND PHYSICAL HAZARDS			15,000.00	

GROUP LEGEND

GROUP NUMBER	SR	CONTROL SECTION	TAX SCHEDULE	FUND PARTICIPANTS
1	005	172715	**	STATE Q3
2	005	172715	**	STATE Q3

DATE	REVISION	BY

REGION	STATE	FEDERAL AID PROJECT. NO.
10	WA	

JOB NUMBER 22A049/2

CONTRACT NO 000000

Washington State Department of Transportation

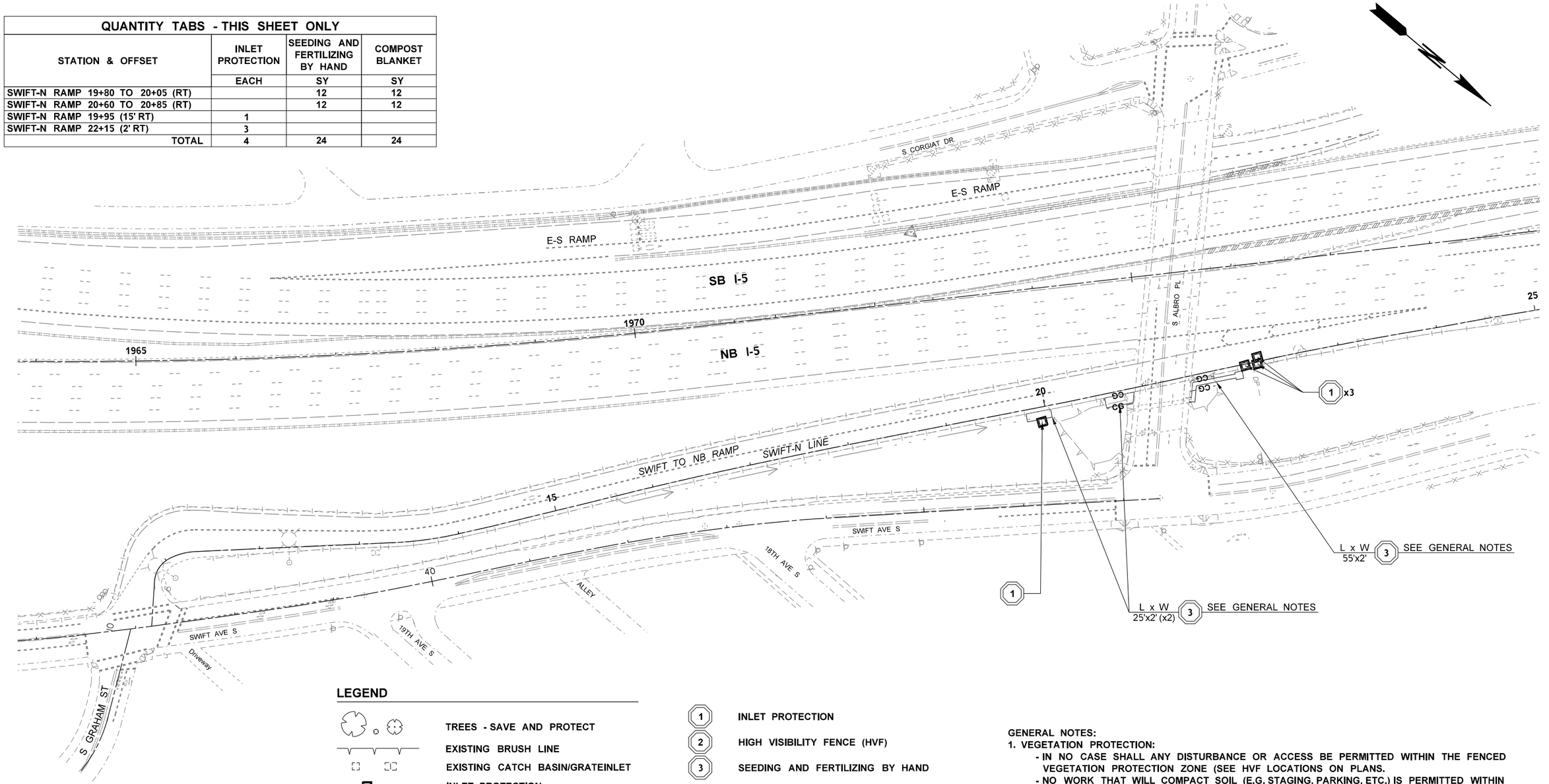
I-5
SEATTLE
ENHANCED RAMP METERING

SUMMARY OF QUANTITIES

SQ1

SHEET 4 OF 43 SHEETS

QUANTITY TABS - THIS SHEET ONLY			
STATION & OFFSET	INLET PROTECTION	SEEDING AND FERTILIZING BY HAND	COMPOST BLANKET
	EACH	SY	SY
SWIFT-N RAMP 19+80 TO 20+05 (RT)		12	12
SWIFT-N RAMP 20+60 TO 20+85 (RT)		12	12
SWIFT-N RAMP 19+95 (15' RT)	1		
SWIFT-N RAMP 22+15 (2' RT)	3		
TOTAL	4	24	24



LEGEND

- TREES - SAVE AND PROTECT
- EXISTING BRUSH LINE
- EXISTING CATCH BASIN/GRATEINLET
- INLET PROTECTION
- HIGH VISIBILITY FENCE
- EXIST DITCH LINE
- WORK AREA
- CLEARING AND GRUBBING
- EXISTING GUARDRAIL

1. INLET PROTECTION
2. HIGH VISIBILITY FENCE (HVF)
3. SEEDING AND FERTILIZING BY HAND

NOTES:

SEE SHEET IT1 FOR ITS LEGEND.
SEE SHEETS IT2 - IT3 FOR ITS WORK ON THIS SHEET.

GENERAL NOTES:

1. VEGETATION PROTECTION:
   - IN NO CASE SHALL ANY DISTURBANCE OR ACCESS BE PERMITTED WITHIN THE FENCED VEGETATION PROTECTION ZONE (SEE HVF LOCATIONS ON PLANS.
   - NO WORK THAT WILL COMPACT SOIL (E.G. STAGING, PARKING, ETC.) IS PERMITTED WITHIN ANY TREE'S DRIPLINE.
   - ALL TRENCHING IN ROOT ZONES SHALL BE DONE BY HAND.
   - CLEARING & GRUBBING LIMITS, SEE SPECIAL PROVISIONS 2-01.1.
2. RESTORATION:
   - AT COMPLETION OF ITS WORK, AND PRIOR TO REMOVING TESC MEASURES, INSTALL 3" COMPOST BLANKET AND INSTALL SEEDING AND FERTILIZING BY HAND FOR ALL EXPOSED SOIL.
   - FOR SEED MIX AND FERTILIZER REQUIREMENTS, SEE SPECIAL PROVISIONS 8-02.2.

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_EC.dgn				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
TIME	11:45:27 AM						
DATE	3/16/2023						
PLOTTED BY	rockz				JOB NUMBER 22A049		
DESIGNED BY	Z. ROCK						
ENTERED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

TESC PLAN

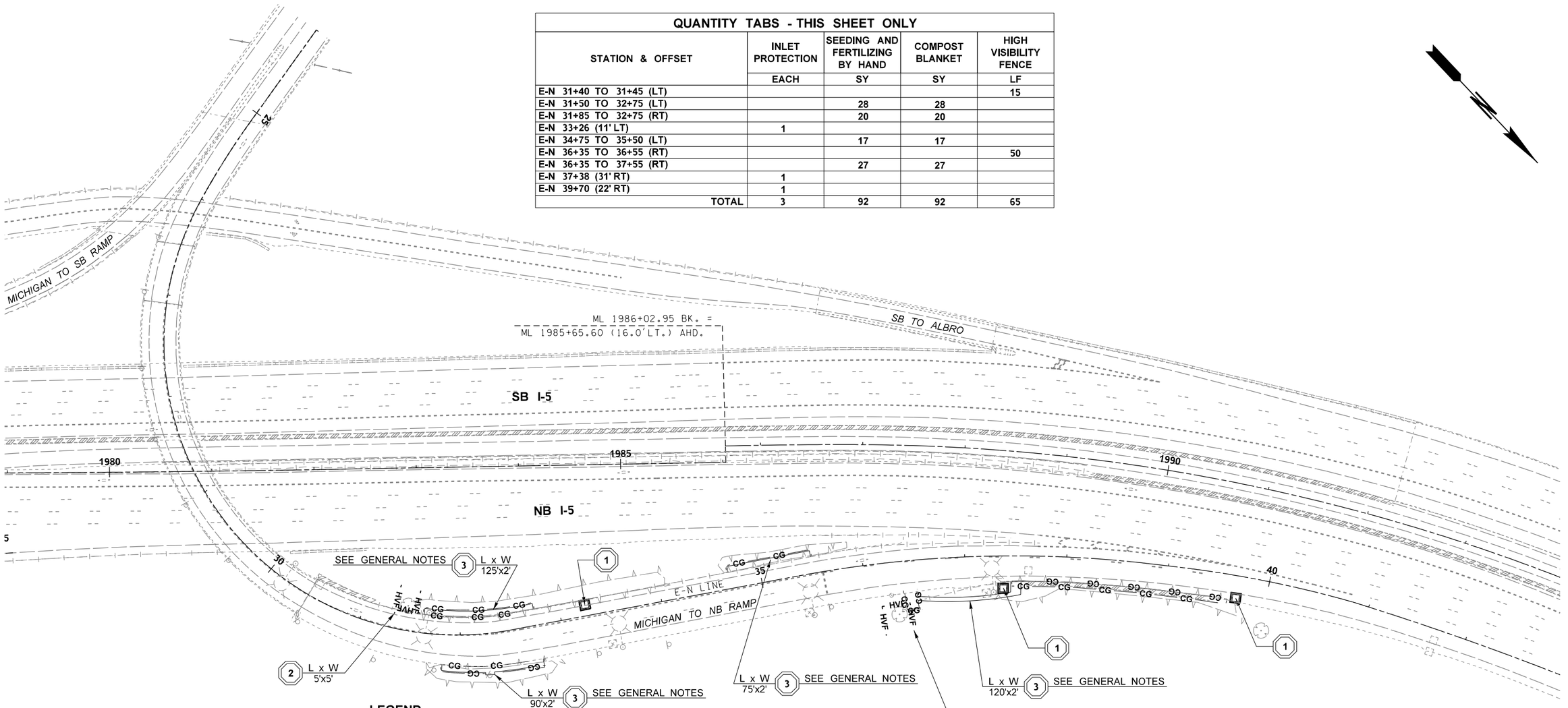
Plot 1

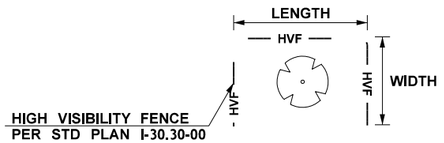
PLAN REF NO EC1

SHEET 5 OF 43 SHEETS

QUANTITY TABS - THIS SHEET ONLY

STATION & OFFSET	INLET PROTECTION	SEEDING AND FERTILIZING BY HAND	COMPOST BLANKET	HIGH VISIBILITY FENCE
	EACH	SY	SY	LF
E-N 31+40 TO 31+45 (LT)				15
E-N 31+50 TO 32+75 (LT)		28	28	
E-N 31+85 TO 32+75 (RT)		20	20	
E-N 33+26 (11' LT)	1			
E-N 34+75 TO 35+50 (LT)		17	17	
E-N 36+35 TO 36+55 (RT)				50
E-N 36+35 TO 37+55 (RT)		27	27	
E-N 37+38 (31' RT)	1			
E-N 39+70 (22' RT)	1			
TOTAL	3	92	92	65





HVF ZONE DETAIL A

NOT TO SCALE

NOTES:

SEE SHEET IT4 FOR ITS LEGEND.
SEE SHEETS IT5 - IT6 FOR ITS WORK ON THIS SHEET.

LEGEND

- TREES - SAVE AND PROTECT
- EXISTING BRUSH LINE
- EXISTING CATCH BASIN/GRATEINLET
- INLET PROTECTION
- HVF — HVF — HIGH VISIBILITY FENCE
- EXIST DITCH LINE
- WORK AREA
- CG — CG — CLEARING AND GRUBBING
- EXISTING GUARDRAIL

1. INLET PROTECTION
2. HIGH VISIBILITY FENCE (HVF)
3. SEEDING AND FERTILIZING BY HAND

GENERAL NOTES:

1. VEGETATION PROTECTION:
   - IN NO CASE SHALL ANY DISTURBANCE OR ACCESS BE PERMITTED WITHIN THE FENCED VEGETATION PROTECTION ZONE (SEE HVF LOCATIONS ON PLANS.
   - NO WORK THAT WILL COMPACT SOIL (E.G. STAGING, PARKING, ETC.) IS PERMITTED WITHIN ANY TREE'S DRIPLINE.
   - ALL TRENCHING IN ROOT ZONES SHALL BE DONE BY HAND.
   - CLEARING & GRUBBING LIMITS, SEE SPECIAL PROVISIONS 2-01.1.
2. RESTORATION:
   - AT COMPLETION OF ITS WORK, AND PRIOR TO REMOVING TESC MEASURES, INSTALL 3" COMPOST BLANKET AND INSTALL SEEDING AND FERTILIZING BY HAND FOR ALL EXPOSED SOIL.
   - FOR SEED MIX AND FERTILIZER REQUIREMENTS, SEE SPECIAL PROVISIONS 8-02.2.

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_EC.dgn						
TIME	11:45:28 AM				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
DATE	3/16/2023						
PLOTTED BY	rockz						
DESIGNED BY	Z. ROCK				JOB NUMBER 22A049		
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO				CONTRACT NO.		LOCATION NO.
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

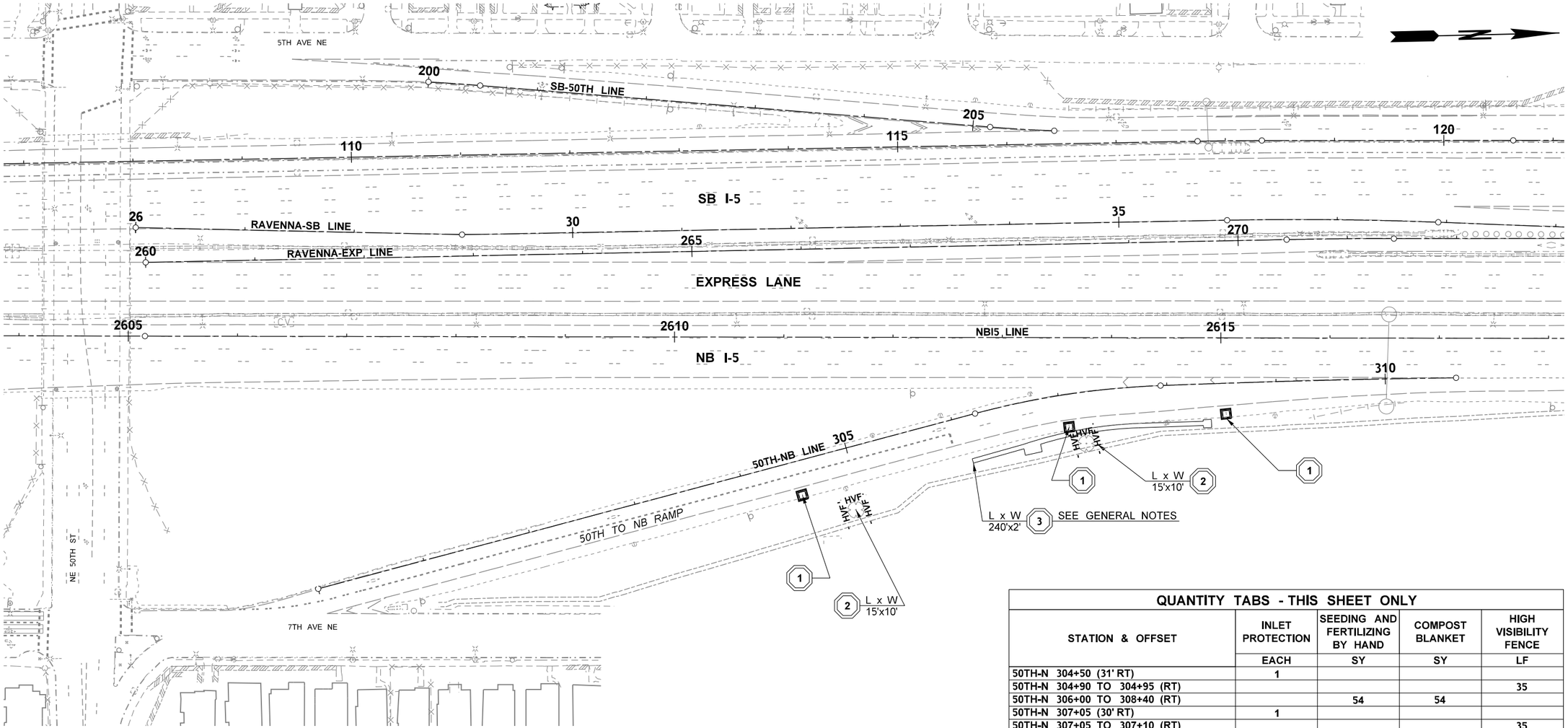
P.E. STAMP BOX — DATE

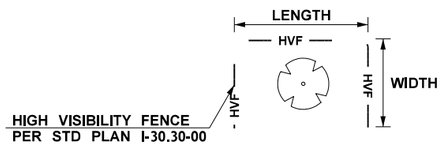
Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

TESC PLAN

Plot 2
PLAN REF NO **EC2**
SHEET 6 OF 43 SHEETS





HVF ZONE DETAIL A

NOT TO SCALE

NOTES:

SEE SHEET IT7 FOR ITS LEGEND.
SEE SHEETS IT8 - IT9 FOR ITS WORK ON THIS SHEET.

LEGEND

- TREES - SAVE AND PROTECT
- EXISTING BRUSH LINE
- EXISTING CATCH BASIN/GRATEINLET
- INLET PROTECTION
- HVF — HVF — HIGH VISIBILITY FENCE
- EXIST DITCH LINE
- WORK AREA
- CG — CG — CLEARING AND GRUBBING
- EXISTING GUARDRAIL

1. INLET PROTECTION
2. HIGH VISIBILITY FENCE (HVF)
3. SEEDING AND FERTILIZING BY HAND

QUANTITY TABS - THIS SHEET ONLY

STATION & OFFSET	INLET PROTECTION	SEEDING AND FERTILIZING BY HAND	COMPOST BLANKET	HIGH VISIBILITY FENCE
	EACH	SY	SY	LF
50TH-N 304+50 (31' RT)	1			
50TH-N 304+90 TO 304+95 (RT)				35
50TH-N 306+00 TO 308+40 (RT)		54	54	
50TH-N 307+05 (30' RT)	1			
50TH-N 307+05 TO 307+10 (RT)				35
50TH-N 308+54 (28' RT)	1			
TOTAL	3	54	54	70

GENERAL NOTES:
1. VEGETATION PROTECTION:
   - IN NO CASE SHALL ANY DISTURBANCE OR ACCESS BE PERMITTED WITHIN THE FENCED VEGETATION PROTECTION ZONE (SEE HVF LOCATIONS ON PLANS.
   - NO WORK THAT WILL COMPACT SOIL (E.G. STAGING, PARKING, ETC.) IS PERMITTED WITHIN ANY TREE'S DRIPLINE.
   - ALL TRENCHING IN ROOT ZONES SHALL BE DONE BY HAND.
   - CLEARING & GRUBBING LIMITS, SEE SPECIAL PROVISIONS 2-01.1.
2. RESTORATION:
   - AT COMPLETION OF ITS WORK, AND PRIOR TO REMOVING TESC MEASURES, INSTALL 3" COMPOST BLANKET AND INSTALL SEEDING AND FERTILIZING BY HAND FOR ALL EXPOSED SOIL.
   - FOR SEED MIX AND FERTILIZER REQUIREMENTS, SEE SPECIAL PROVISIONS 8-02.2.

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_EC.dgn			
TIME	11:45:28 AM			
DATE	3/16/2023			
PLOTTED BY	rockz			
DESIGNED BY	Z. ROCK			
ENTERED BY	Z. ROCK			
CHECKED BY	C. WOO			
PROJ. ENGR.	C. SANTIAGO			
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY

REGION NO. 10 | STATE WASH | FED.AID PROJ.NO.
JOB NUMBER 22A049
CONTRACT NO. | LOCATION NO.

P.E. STAMP BOX — DATE
P.E. STAMP BOX — DATE

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

TESC PLAN

Plot 3
PLAN REF NO EC3
SHEET 7 OF 43 SHEETS

CONSTRUCTION NOTES:

101 INSTALL SIGNAL POLE FOUNDATION, TYPE II SIGNAL POLE WITH MASTARM, TWO 3-SECTION (3-12") VEHICLE SIGNAL HEADS WITH BACK-PLATES, EMERGENCY VEHICLE PRE-EMPTION (EVP) DETECTOR AND ALL ASSOCIATED EQUIPMENT IN ACCORDANCE WITH TRAFFIC DATA ACCUMULATION AND RAMP METERING SYSTEM SPECIAL PROVISIONS AND ITS DETAIL SHEETS ITD1 & ITD4.

102 INSTALL TYPE R1 INDUCTION LOOP VEHICLE DETECTOR IN ACCORDANCE WITH THE INDUCTION LOOP VEHICLE DETECTOR SPECIAL PROVISIONS AND THE ITS DETAIL SHEETS ITD5 - ITD7.

103 INSTALL TYPE R2 INDUCTION LOOP VEHICLE DETECTOR IN ACCORDANCE WITH THE INDUCTION LOOP VEHICLE DETECTOR SPECIAL PROVISIONS AND THE ITS DETAIL SHEETS ITD5 - ITD7.

104 INSTALL TYPE WR INDUCTION LOOP VEHICLE DETECTOR IN ACCORDANCE WITH THE INDUCTION LOOP VEHICLE DETECTOR SPECIAL PROVISIONS AND ITS DETAIL SHEETS ITD5 - ITD7.

105 DISCONNECT AND REMOVE THE EXISTING 5C CABLE BACK TO THE CABINET. THE 5C CABLE AND THE SIGNAL HEADS SHALL NOT BE DISCONNECTED UNTIL THE SIGNAL STANDARD TYPE II ASSEMBLY IS INSTALLED, TESTED AND OPERATIONAL.

106 REMOVE THE EXISTING SIGNAL HEADS (2) AND DELIVER TO THE SIGNAL SHOP IN ACCORDANCE WITH THE REMOVAL AND DELIVERY OF EXISTING ITS EQUIPMENT SPECIAL PROVISION. EXISTING TYPE 1 SIGNAL POLE AND FOUNDATION TO REMAIN.

107 REPLACE LOOP LABELS ON CABINET DISPLAY PANEL ACCORDING TO THE LOOP NAMING TABLE ON ITS SHEET IT2, SPECIAL PROVISIONS, AND NOTE D3 ON STANDARD PLAN J-81.10.

108 INSTALL EMERGENCY VEHICLE PRE-EMPTION (EVP) DETECTION EQUIPMENT AND EVP CABLE IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND THE MANUFACTURER RECOMMENDATIONS IN EXISTING RAMP METER CABINET.

109 INSTALL NEW CONDUIT STUB-OUT INTO EXISTING JUNCTION BOX IN ACCORDANCE WITH TABLE A OF ITD7. PROTECT AND PRESERVE EXISTING STUB-OUT. SPLICE THE NEW LOOP WIRES TO NEW DETECTOR LEAD-IN(S). LABEL NEW LOOP AT SPLICE AND IN THE CABINET ACCORDING TO LOOP NAMING TABLE ON SHEET IT2.

110 TERMINATE ALL DETECTOR LEAD-INS, SIGNAL HEAD CABLES, EVP CABLE, AND ALL OTHER NECESSARY CABLES IN EXISTING RAMP METER CABINET. TERMINATE THE EVP CABLE DIRECTLY TO THE REAR OF THE INPUT FILE: ORANGE TO J-14E, YELLOW TO J-14D, AND BLUE & BARE TO J-14K.

111 RELABEL LOOP(S) AT SPLICE(S) AND IN THE CABINET ACCORDING TO LOOP NAMING TABLE ON SHEET IT2.

112 INSTALL ONE LOOP AMPLIFIER FOR EACH LOOP INSTALLED OR REPLACED IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

113 PRIOR TO INSTALLING NEW LOOP(S), CONTRACTOR SHALL LOCATE ADJACENT EXISTING LOOP(S) AND STUB-OUT (BELOW ASPHALT).

114 INTERCEPT EXISTING 2" RGS CONDUIT WITH A NEW FRONT ENTRY NEMA JUNCTION BOX (8"X8"X6").

115 INSTALL RGS CONDUIT ATTACHED ON STRUCTURE WITH STAINLESS STEEL CHANNEL SUPPORT SPACED AT MAXIMUM 5-FEET INTERVAL IN ACCORDANCE WITH THE SURFACE MOUNTING CONDUIT ATTACHMENT COMPONENTS SPECIAL PROVISION, STANDARD PLAN J-60.13 & ITS DETAILS SHEET ITD8. ROUTE CONDUIT TO NEW NEMA BOX.

116 INSTALL RGS CONDUIT ATTACHED ON STRUCTURE WITH STAINLESS STEEL CHANNEL SUPPORT SPACED AT MAXIMUM 5-FEET INTERVAL IN ACCORDANCE WITH THE SURFACE MOUNTING CONDUIT ATTACHMENT COMPONENTS SPECIAL PROVISION, AND STANDARD PLAN. ROUTE CONDUIT TO EXISTING NEMA BOX.

117 ABANDON EXISTING LOOP(S). DISCONNECT AND REMOVE DETECTOR LEAD-IN BETWEEN LOOP SPLICE AND CABINET.

118 TERMINATE EXISTING DETECTOR LEAD-IN FOR LOOP "-MNHDS1" IN THE EXISTING RAMP METER CABINET AS "-MNVQ-2". RELABEL LOOP AT SPLICE AND IN THE CABINET ACCORDING TO LOOP NAMING TABLE ON SHEET IT2.

119 TEST LOOP(S) IN ACCORDANCE WITH THE TEST FOR INDUCTION LOOPS AND LEAD-IN CABLE SPECIAL PROVISIONS.

120 REMOVE AND RESET EXISTING GUARDRAIL AS NEEDED TO GAIN ACCESS TO THE WORK AREA. GUARDRAIL SHALL BE RE-INSTALLED BEFORE THE LANE IS RE-OPENED TO TRAFFIC AT THE END OF EACH DAY.

121 REMOVE EXISTING RIPRAP AS NEEDED TO INSTALL ITS EQUIPMENT AND RESTORE AS IT WAS BEFORE WHEN WORK IS COMPLETED.

CONSTRUCTION NOTES (CONTINUED):

122 PROTECT AND PRESERVE ADJACENT EXISTING LOOP(S).

123 CONTRACTOR SHALL INSTALL TEMPORARY STOP LINE PER STANDARD SPECIFICATIONS 8-23.3(4)A ACROSS THE HOV LANE AS SOON AS THE NEW TYPE 2 RAMP METERING SYSTEM IS MADE OPERATIONAL.

124 BRIDGE FOOTING POTENTIALLY IN THE VICINITY. TRENCHING FOR CONDUIT IN THIS AREA SHALL BE DONE WITH EXTREME CARE (HAND DIGGING MAY BE REQUIRED).

ITS & SIGN LEGEND

Existing	New		Existing	New	
		Type 1 Junction Box			Beam Guardrail
		Type 2 Junction Box			Retaining Wall
		Type 3 Junction Box			Noise Wall
		Type 4 Junction Box			Stop Line
		Type 8 Junction Box			Sign & Post
		Nema Box			Mast Arm Sign
CV		ITS Cable Vault			
PB		ITS Pull Box			
T		Transformer Cabinet			
		CCTV Cabinet			
		Controller/Ramp Meter Cabinet			
		Electrical Service Cabinet			
		R1 Induction Loop			
		R2 Induction Loop			
		WR Induction Loop			
		CCTV Camera			
		Conduit			
		Advance Warning Sign			
		Ramp Meter Signal Head Type 1			
		Type 2 Ramp Meter Signal Standard			

Symbols

- Wire Note
- Signal Pole Number
- Construction Note
- Sign Installation Symbol
- Sign Removal Symbol

GENERAL NOTES

1. THE LOCATIONS OF FEATURES SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR AND BE APPROVED BY THE ENGINEER.
2. ALIGNMENTS AND STATIONINGS PROVIDED ARE FOR REFERENCE ONLY.
3. IN ALL JUNCTION BOXES THAT WORK WILL BE DONE, THE CONTRACTOR SHALL PROTECT ALL CONDUIT OPENING, REMOVE ALL DEBRIS USING "VACTOR" VACUUM TRUCK AND DIRT 6" BELOW THE BOX AND INSTALL CRUSHED SURFACING BASE COURSE IN THE BOTTOM OF JUNCTION BOXES PER STANDARD PLAN OR REMOVE AND RESET THE JUNCTION BOX.
4. IN ALL PULL BOXES AND CABLE VAULTS THAT WORK WILL BE DONE, THE CONTRACTOR SHALL PROTECT ALL CONDUIT OPENING, REMOVE ALL DEBRIS AND CLEAN VAULTS.
5. EXISTING JUNCTION BOXES AND LIDS ARE WELDED TOGETHER. SEPARATING THE TACK WELDS ARE REQUIRED TO GAIN ACCESS THE TO THE CABLES. CONTRACTOR SHALL TACK WELD LID TO JUNCTION BOX AFTER RAMP METER IS TESTED AND OPERATIONAL AS IT WAS BEFORE.

SWIFT AVE S - NB I-5 RAMP (005es16120)

(TRAFFIC DATA ACCUMULATION & RAMP METERING SYSTEM MOD-1)

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_I-5 SWIFT - NB_PS_IT&SN.dgn				REGION NO.	STATE	FED.AID PROJ.NO.	Plot 1
TIME	10:13:31 AM				10	WASH		PLAN REF NO IT1
DATE	3/23/2023				JOB NUMBER			
PLOTTED BY	rockz				22A049			SHEET 8 OF 43 SHEETS
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.	
ENTERED BY	Z. ROCK							
CHECKED BY	G. BAGHAI							
PROJ. ENGR.	C. SANTIAGO							
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY				

P.E. STAMP BOX — DATE

MICHAEL LEE FORBIS, STATE OF WASHINGTON, 22138, REGISTERED PROFESSIONAL ENGINEER — Michael Forbis — SEE SHEET CT1 — DATE — P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS AND SIGNING PLAN

WIRING SCHEDULE

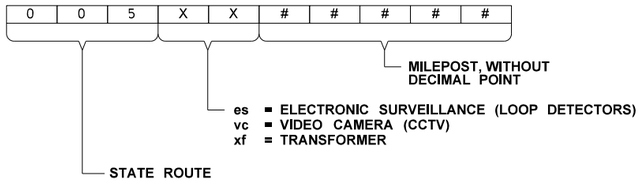
RUN NO.	EXISTING CONDUIT	NEW CONDUIT	EXISTING CONDUCTOR	NEW CONDUCTOR	REMARK
101	2"		1-5C		ADVANCE WARNING SIGNS
			1-24 SMFO		DATA COMMUNICATION
102	2"		1-5C		ADVANCE WARNING SIGNS
			1-2C(SH)		DETECTOR LEAD-IN
				1-2C(SH)	DETECTOR LEAD-IN
			1-24 SMFO		DATA COMMUNICATION
103	2"		1-5C		ADVANCE WARNING SIGNS
			4-2C(SH)		DETECTOR LEAD-IN
				1-2C(SH)	DETECTOR LEAD-IN
			1-24 SMFO		DATA COMMUNICATION
104	2"		1-5C (R)		RAMP METER SIGNALS (REMOVE 1-5C AFTER NEW RAMP METER TURN ON)
105	3"		2-48 SMFO		DISTRIBUTION DATA & VIDEO COMMUNICATION
			1-24 SMFO		DATA COMMUNICATION
106		2" (RGS)		2-5C	SIGNAL HEADS
				EVP	EMERGENCY VEHICLE PRE-EMPTION (EVP) CABLE
107	3"		2-48 SMFO		DISTRIBUTION DATA & VIDEO COMMUNICATION
			1-24 SMFO		DATA COMMUNICATION
			1-48 STUB		PRETERM STUB
			1-24 STUB		PRETERM STUB
108	3"		1-5C (R)		RAMP METER SIGNALS (REMOVE 1-5C AFTER NEW RAMP METER TURN ON)
			1-5C		ADVANCE WARNING SIGNS
			2-2C(SH)		DETECTOR LEAD-IN (R)
			5-2C(SH)		DETECTOR LEAD-IN
				4-2C(SH)	DETECTOR LEAD-IN
109	2"		1-CCC		CAMERA CONTROL CABLE
110	2"		1-24 SMFO		DATA COMMUNICATION
111	2"		1-48 STUB		PRETERM STUB
	2"		1-24 STUB		PRETERM STUB
112	2"		1-24 SMFO		DATA COMMUNICATION
113	2"			1-2C(SH)	DETECTOR LEAD-IN
114	3"		10-2C(SH)		DETECTOR LEAD-IN
115	2"			2-5C	SIGNAL HEADS
				EVP	EMERGENCY VEHICLE PRE-EMPTION (EVP) CABLE
				1-2C(SH)	DETECTOR LEAD-IN
116		2" (RGS)		1-2C(SH)	DETECTOR LEAD-IN
117-199					NOT USED

(R) - REMOVE EXISTING CABLES.

LOOP NAMING TABLE - Swift Ave-NB I-5 (005es16120)

Terminal	Loop #	Loop Name	Remarks
TB2-1&2	Pin1	_MNRA_1	Existing
TB2-3&4	Pin2	_MN_Q_1	Existing
TB2-5&6	Pin3	_MN_D_1	Existing
TB2-7&8	Pin4	_MN_P_1	Existing
TB2-9&10	Pin5	_MN_M_1	New Loop
TB2-11&12	Pin6	_MNVA_2	New Loop
TB3-1&2	Pin7	_MNHO_2	Existing _MNHD_2, Renamed
TB3-3&4	Pin8	_MNVQ_2	Existing _MNHDS2, Renamed
TB3-5&6	Pin9	_MNVD_2	New Loop
TB3-7&8	Pin10	_MNVP_2	Existing _MNHP_2, Renamed
TB3-9&10	Pin11	MMN___1	Existing
TB3-11&12	Pin12	MMN___2	Existing
TB4-1&2	Pin13	MMN___3	Existing
TB4-3&4	Pin14	MMN___4	Existing
TB4-5&6	Pin15	_MNH__5	Existing
TB4-7&8	Pin16	_MN__S1	Existing
TB4-9&10	Pin17	_MN__S2	Existing
TB4-11&12	Pin18	_MN__S3	Existing
TB5-1&2	Pin19	_MN__S4	Existing
TB5-3&4	Pin20	_MNH_S5	Existing

KEY FOR ID NUMBERS FOR ITS DEVICES



ABBREVIATION

EX = EXISTING
TYP = TYPICAL
PLCS = PLACES
RGS = RIGID GALVANIZED STEEL
EVP = EMERGENCY VEHICLE PRE-EMPTION

SWIFT AVE S - NB I-5 RAMP (005es16120)

(TRAFFIC DATA ACCUMULATION & RAMP METERING SYSTEM MOD-1)

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_I-5 SWIFT - NB_PS_IT&SN.dgn
TIME	10:13:31 AM
DATE	3/23/2023
PLOTTED BY	rockz
DESIGNED BY	Z. ROCK
ENTERED BY	Z. ROCK
CHECKED BY	G. BAGHAI
PROJ. ENGR.	C. SANTIAGO
REGIONAL ADM.	B. NIELSEN

REVISION	DATE	BY

REGION NO. 10 | STATE WASH | FED.AID PROJ.NO.
JOB NUMBER 22A049 | CONTRACT NO. | LOCATION NO.

P.E. STAMP BOX — DATE

MICHAEL LEE FORBIS · STATE OF WASHINGTON · 32138 · REGISTERED PROFESSIONAL ENGINEER
Michael Forbis
P.E. STAMP BOX — DATE

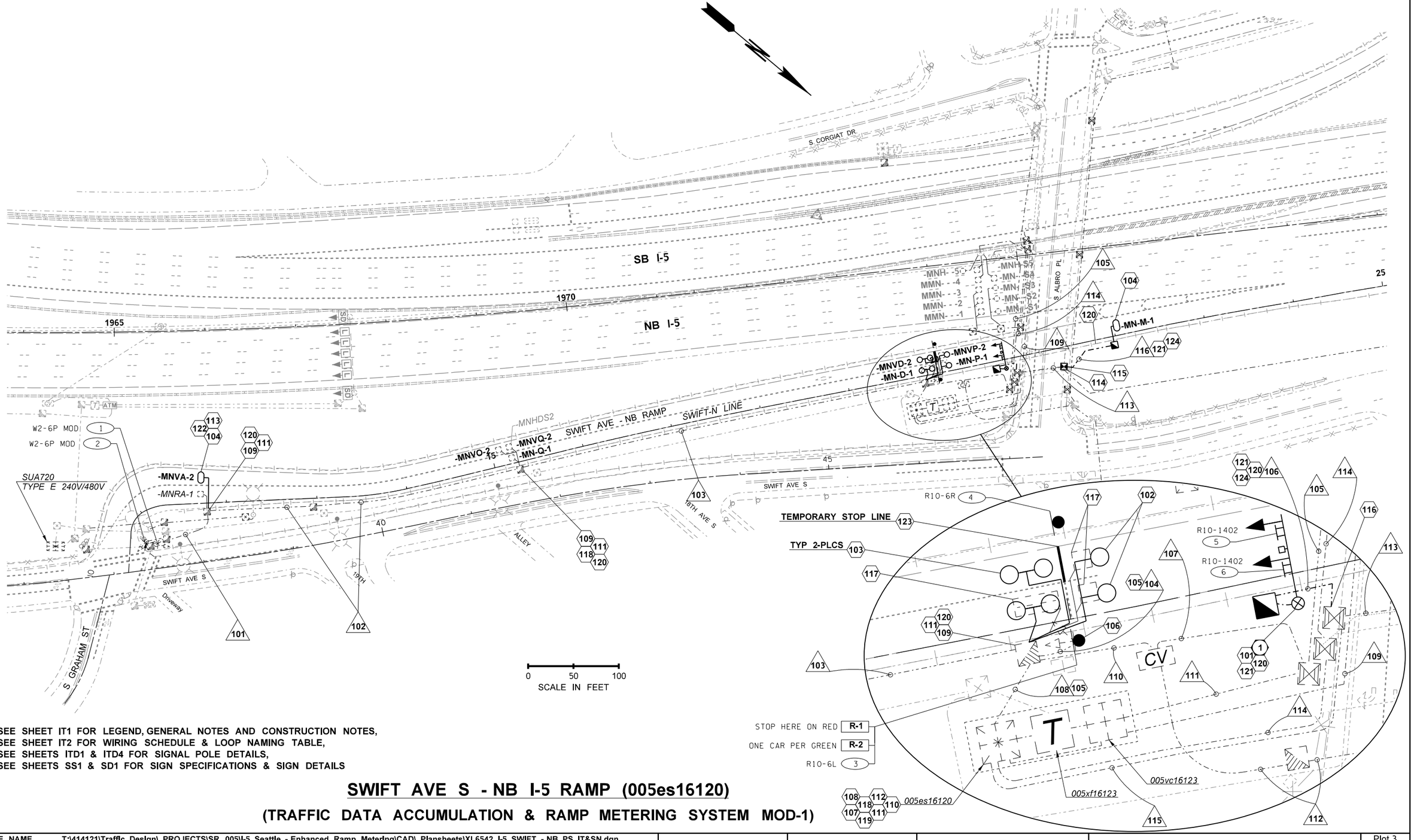
SEE SHEET CT1

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS AND SIGNING PLAN

Plot 2
PLAN REF NO IT2
SHEET 9 OF 43 SHEETS



SEE SHEET IT1 FOR LEGEND, GENERAL NOTES AND CONSTRUCTION NOTES,
SEE SHEET IT2 FOR WIRING SCHEDULE & LOOP NAMING TABLE,
SEE SHEETS ITD1 & ITD4 FOR SIGNAL POLE DETAILS,
SEE SHEETS SS1 & SD1 FOR SIGN SPECIFICATIONS & SIGN DETAILS

SWIFT AVE S - NB I-5 RAMP (005es16120)

(TRAFFIC DATA ACCUMULATION & RAMP METERING SYSTEM MOD-1)

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_I-5 SWIFT - NB_PS_IT&SN.dgn				REGION NO. 10 / STATE WASH	FED.AID PROJ.NO.
TIME	10:13:32 AM					
DATE	3/23/2023					
PLOTTED BY	rockz					
DESIGNED BY	Z. ROCK				JOB NUMBER 22A049	
ENTERED BY	Z. ROCK					
CHECKED BY	G. BAGHAI				CONTRACT NO.	LOCATION NO.
PROJ. ENGR.	C. SANTIAGO					
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY		

P.E. STAMP BOX — DATE

MICHAEL LEE FORBIS — STATE OF WASHINGTON — 32138 — REGISTERED PROFESSIONAL ENGINEER

SEE SHEET CT1 DATE

P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS AND SIGNING PLAN

Plot 3
PLAN REF NO IT3
SHEET 10 OF 43 SHEETS

CONSTRUCTION NOTES:

201 INSTALL SIGNAL POLE FOUNDATION, TYPE II SIGNAL POLE WITH MASTARM, THREE 3-SECTION (3-12") VEHICLE SIGNAL HEADS WITH BACK-PLATES AND ALL ASSOCIATED EQUIPMENT IN ACCORDANCE WITH TRAFFIC DATA ACCUMULATION AND RAMP METERING SYSTEM SPECIAL PROVISIONS AND ITS DETAIL SHEETS ITD2 & ITD4.

202 INSTALL TYPE R1 INDUCTION LOOP VEHICLE DETECTOR IN ACCORDANCE WITH THE INDUCTION LOOP VEHICLE DETECTOR SPECIAL PROVISIONS AND ITS DETAIL SHEETS ITD5 - ITD7.

203 INSTALL TYPE R2 INDUCTION LOOP VEHICLE DETECTOR IN ACCORDANCE WITH THE INDUCTION LOOP VEHICLE DETECTOR SPECIAL PROVISIONS AND ITS DETAIL SHEETS ITD5 - ITD7.

204 INSTALL TYPE WR INDUCTION LOOP VEHICLE DETECTOR IN ACCORDANCE WITH THE INDUCTION LOOP VEHICLE DETECTOR SPECIAL PROVISIONS AND ITS DETAIL SHEETS ITD5 - ITD7.

205 DISCONNECT AND REMOVE THE EXISTING 5C CABLE BACK TO THE CABINET. THE 5C CABLE AND THE SIGNAL HEADS SHALL NOT BE DISCONNECTED UNTIL NEW SIGNAL STANDARD TYPE II ASSEMBLY IS INSTALLED, TESTED AND OPERATIONAL.

206 REMOVE EXISTING SIGNAL STANDARD TYPE II POLE, MASTARM, SIGNAL HEADS, AND DELIVER TO THE SIGNAL SHOP IN ACCORDANCE WITH THE REMOVAL AND DELIVERY OF EXISTING ITS EQUIPMENT SPECIAL PROVISIONS.

207 NOT USED.

208 NOT USED.

209 ABANDON EXISTING LOOP(S). DISCONNECT AND REMOVE DETECTOR LEAD-IN BETWEEN ABANDONED LOOP SPLICE AND CABINET.

210 TERMINATE ALL DETECTOR LEAD-INS, SIGNAL HEADS, AND ALL OTHER NECESSARY CABLES IN EXISTING RAMP METER CABINET.

211 RELABEL EXISTING LOOPS AT SPLICES AND IN THE CABINET ACCORDING TO LOOP NAMING TABLE ON SHEET IT5.

213 ROUTE NEW CONDUIT INTO EXISTING OR REPLACED JUNCTION BOX.

214 INSTALL ONE LOOP AMPLIFIER FOR EACH NEW LOOP INSTALLED OR REPLACED IN ACCORDANCE WITH THE SPECIAL PROVISION.

215 REMOVE EXISTING SIGNAL STANDARD FOUNDATION AND BACKFILL VOID IN ACCORDANCE WITH THE STANDARD SPECIFICATION 2-02.3(1).

216 CORE DRILL THROUGH EXISTING WALL. INSTALL A 1.5" RGS CONDUIT STUB-OUT FROM ROADWAY TO THE NEW SURFACE-MOUNTED NEMA JUNCTION BOX. SPLICE THE NEW LOOP WIRES TO THE NEW DETECTOR LEAD-IN(S). LABEL NEW LOOP AT SPLICE AND IN THE CABINET ACCORDING TO LOOP NAMING TABLE ON SHEET IT5.

217 CONTRACTOR SHALL INSTALL TEMPORARY STOP LINE PER STANDARD SPECIFICATIONS 8-23.3(4)A ACROSS THE HOV LANE AS SOON AS THE NEW TYPE 2 RAMP METERING SYSTEM IS MADE OPERATIONAL.

218 NOT USED.

219 INSTALL 12"x8"x6" FRONT ENTRY NEMA JUNCTION BOX ON STRUCTURE.

220 INSTALL RIGID GALVANIZED STEEL (RGS) CONDUIT ON STRUCTURE (WALL/BARRIER/UNDER DECK) USING STAINLESS STEEL CHANNEL SPACED AT 5-FEET INTERVAL IN ACCORDANCE WITH THE SURFACE MOUNTING CONDUIT ATTACHMENT COMPONENTS SPECIAL PROVISION, STANDARD PLAN J-60.13 AND J-60.14 AND ITS DETAILS SHEET ITD9. ROUTE THE CONDUIT INTO EXISTING/NEW SURFACE MOUNT NEMA JUNCTION BOX.

221 REMOVE AND RESET EXISTING GUARDRAIL AS NEEDED TO GAIN ACCESS TO THE WORK AREA. GUARDRAIL SHALL BE RE-INSTALLED BEFORE THE LANE IS RE-OPENED TO TRAFFIC AT THE END OF EACH DAY.

222 INSTALL NEW CONDUIT STUB-OUT BELOW EXISTING CURB TO NEW JUNCTION BOX. SPLICE THE NEW LOOP WIRES TO THE NEW DETECTOR LEAD-IN(S). LABEL NEW LOOP AT SPLICE AND IN THE CABINET ACCORDING TO LOOP NAMING TABLE ON SHEET IT5.

CONSTRUCTION NOTES (CONTINUED):

223 REPLACE EXISTING TYPE 3 JUNCTION BOX WITH A TYPE 8 JUNCTION BOX.

224 PROTECT AND PRESERVE ADJACENT EXISTING LOOP(S).

225 INSTALL RIGID GALVANIZED STEEL (RGS) CONDUIT ON STRUCTURE (WALL/BARRIER/UNDER DECK) USING STAINLESS STEEL CHANNEL SPACED AT 5-FEET INTERVAL IN ACCORDANCE WITH THE SURFACE MOUNTING CONDUIT ATTACHMENT COMPONENTS SPECIAL PROVISION, STANDARD PLAN J-60.13 AND J-60.14 AND ITS DETAILS SHEET ITD10. ROUTE THE CONDUIT INTO NEW JUNCTION BOX.

226 REPLACE LOOP LABELS ON CABINET DISPLAY PANEL ACCORDING TO THE LOOP NAME TABLE ON SHEET IT5 AND STANDARD PLAN J-81.10, NOTE D3.

ITS & SIGN LEGEND

Existing	New		Existing	New	
		Type 1 Junction Box			Beam Guardrail
		Type 2 Junction Box			Retaining Wall
		Type 3 Junction Box			Noise Wall
		Type 4 Junction Box			Stop Line
		Type 8 Junction Box			Sign & Post
		Nema Box			Mast Arm Sign
CV		ITS Cable Vault			
PB		ITS Pull Box			
T		Transformer Cabinet			
		CCTV Cabinet			
		Controller/Ramp Meter Cabinet			
		Electrical Service Cabinet			
		R1 Induction Loop			
		R2 Induction Loop			
		WR Induction Loop			
		CCTV Camera			
		Conduit			
		Advance Warning Sign			
		Ramp Meter Signal Head Type 1			
		Type 2 Ramp Meter Signal Standard			

Symbols

- Wire Note
- Signal Pole Number
- Construction Note
- Sign Installation Symbol
- Sign Removal Symbol

GENERAL NOTES

1. THE LOCATIONS OF FEATURES SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR AND BE APPROVED BY THE ENGINEER.
2. ALIGNMENTS AND STATIONINGS PROVIDED ARE FOR REFERENCE ONLY.
3. IN ALL JUNCTION BOXES THAT WORK WILL BE DONE, THE CONTRACTOR SHALL PROTECT ALL CONDUIT OPENING, REMOVE ALL DEBRIS USING "VACTOR" VACUUM TRUCK AND DIRT 6" BELOW THE BOX AND INSTALL CRUSHED SURFACING BASE COURSE IN THE BOTTOM OF JUNCTION BOXES PER STANDARD PLAN OR REMOVE AND RESET THE JUNCTION BOX.
4. IN ALL PULL BOXES AND CABLE VAULTS THAT WORK WILL BE DONE, THE CONTRACTOR SHALL PROTECT ALL CONDUIT OPENING, REMOVE ALL DEBRIS AND CLEAN VAULTS.

MICHIGAN ST - NB I-5 RAMP (005es16147)

(TRAFFIC DATA ACCUMULATION & RAMP METERING SYSTEM MOD-2)

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_I-5 MICHIGAN - NB_PS_IT&SN.dgn				
TIME	10:25:13 AM			REGION NO. 10	STATE WASH
DATE	3/23/2023				FED.AID PROJ.NO.
PLOTTED BY	rockz			JOB NUMBER 22A049	
DESIGNED BY	Z. ROCK				
ENTERED BY	Z. ROCK			CONTRACT NO.	LOCATION NO.
CHECKED BY	G. BAGHAI				
PROJ. ENGR.	C. SANTIAGO				
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY	

P.E. STAMP BOX — DATE

MICHAEL LEE FORBIS — STATE OF WASHINGTON — 32136 — REGISTERED PROFESSIONAL ENGINEER

Michael Forbis

SEE SHEET CT1 — DATE

P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS AND SIGNING PLAN

Plot 1

PLAN REF NO IT4

SHEET 11 OF 43 SHEETS

WIRING SCHEDULE

RUN NO.	EXISTING CONDUIT	NEW CONDUIT	EXISTING CONDUCTOR	NEW CONDUCTOR	REMARK
201	3"		3-5C		ADVANCE WARNING SIGNS
			1-2C(SH)*		DETECTOR LEAD-IN (R), -MNRA-1
202	3"		3-5C		ADVANCE WARNING SIGNS
			1-2C(SH)*		DETECTOR LEAD-IN (R), -MNRA-1
				2-2C(SH)	DETECTOR LEAD-IN
203	2"		4-2C(SH)		DETECTOR LEAD-IN
204	3"		3-5C		ADVANCE WARNING SIGNS
			1-2C(SH)*		DETECTOR LEAD-IN (R), -MNRA-1
			5-2C(SH)		DETECTOR LEAD-IN
				2-2C(SH)	DETECTOR LEAD-IN
205	2"		1-2C(SH)		DETECTOR LEAD-IN
			1-6TWP*		COMMUNICATION (R)
206	2"				
			3-2C(SH)		DETECTOR LEAD-IN
				2-2C(SH)	DETECTOR LEAD-IN
			1-6TWP*		COMMUNICATION (R)
207	3"		2-5C*		RAMP METER SIGNALS (R)
				3-5C	RAMP METER SIGNALS
			1-2C(SH)*		DETECTOR LEAD-IN (R), _MNHP_3
			7-2C(SH)		DETECTOR LEAD-IN
				3-2C(SH)	DETECTOR LEAD-IN
			1-6TWP*		COMMUNICATION (R)
208	3"		2-5C*		RAMP METER SIGNALS (R)
				3-5C	RAMP METER SIGNALS
			1-2C(SH)*		DETECTOR LEAD-IN (R), _MNHP_3
			4-2C(SH)		DETECTOR LEAD-IN
				1-2C(SH)	DETECTOR LEAD-IN
209	2"		2-5C*		RAMP METER SIGNALS (R)
				3-5C	RAMP METER SIGNALS
				2-2C(SH)	DETECTOR LEAD-IN
210		2"		3-5C	RAMP METER SIGNALS
211		2" RGS		2-2C(SH)	DETECTOR LEAD-IN
212		2"		1-2C(SH)	DETECTOR LEAD-IN
213	2"		6-2C(SH)		DETECTOR LEAD-IN
214	3"		2-5C*		RAMP METER SIGNALS (R)
				3-5C	RAMP METER SIGNALS
			3-5C		ADVANCE WARNING SIGNS
			2-2C(SH)*		DETECTOR LEAD-IN (R)
			12-2C(SH)		DETECTOR LEAD-IN
				6-2C(SH)	DETECTOR LEAD-IN
			1-6TWP*		COMMUNICATION (R)
	2"		1-CAT6		DATA COMMUNICATION
	2"		EMPTY		SPARE
215	2"		1-CAT6		DATA COMMUNICATION
216	2"		1-CAT6		DATA COMMUNICATION
			1-24 STUB		DATA COMMUNICATION
	3"		EMPTY		SPARE
217	2"		2-48 SMFO		DISTRIBUTION DATA & VIDEO COMMUNICATION
	2"		EMPTY		SPARE
218		2"		2-2C(SH)	DETECTOR LEAD-IN
219	3"		3-5C		ADVANCE WARNING SIGNS
			1-2C(SH)*		DETECTOR LEAD-IN (R)
			5-2C(SH)		DETECTOR LEAD-IN
				3-2C(SH)	DETECTOR LEAD-IN
220		2"		2-2C(SH)	DETECTOR LEAD-IN

(R) - REMOVE EXISTING CABLES.

WIRING SCHEDULE (CONTINUED)

RUN NO.	EXISTING CONDUIT	NEW CONDUIT	EXISTING CONDUCTOR	NEW CONDUCTOR	REMARK
221	2"		6-2C(SH)		DETECTOR LEAD-IN
				2-2C(SH)	DETECTOR LEAD-IN
223		2"		1-2C(SH)	DETECTOR LEAD-IN
224		2" RGS		1-2C(SH)	DETECTOR LEAD-IN
225	3" RGS		3-5C		ADVANCE WARNING SIGNS
226 - 299					NOT USED

(R) - REMOVE EXISTING CABLES.

LOOP NAMING TABLE - Michigan St-NB I-5 (005es16147)

Terminal	Loop #	Loop Name	Remarks
TB2-1&2	Pin1	_MN_Q_1	New Loop
TB2-3&4	Pin2	_MN_D_1	Existing
TB2-5&6	Pin3	_MN_P_1	Existing
TB2-7&8	Pin4	_MN_M_1	New Loop
TB2-9&10	Pin5	_MNRA_2	New Loop
TB2-11&12	Pin6	_MN_O_2	Existing _MN_Q_2, Renamed
TB3-1&2	Pin7	_MN_Q_2	New Loop
TB3-3&4	Pin8	_MN_D_2	Existing
TB3-5&6	Pin9	_MN_P_2	Existing
TB3-7&8	Pin10	_MNVA_3	New Loop
TB3-9&10	Pin11	_MNHO_3	Existing _MNHD_3, Renamed
TB3-11&12	Pin12	_MNVQ_3	New Loop (MNHDS3 Abandoned)
TB4-1&2	Pin13	_MNVD_3	New Loop
TB4-3&4	Pin14	_MNVP_3	Existing _MNHP_3, Renamed
TB4-5&6	Pin15	MMN___1	Existing
TB4-7&8	Pin16	MMN___2	Existing
TB4-9&10	Pin17	MMN___3	Existing
TB4-11&12	Pin18	MMN___4	Existing
TB5-1&2	Pin19	_MNH__5	Existing
TB5-3&4	Pin20	_MN__S1	Existing
TB5-5&6	Pin21	_MN__S2	Existing
TB5-7&8	Pin22	_MN__S3	Existing
TB5-9&10	Pin23	_MN__S4	Existing
TB5-11&12	Pin24	_MNH_S5	Existing
TB6-1&2	Pin25	NOT USED	Not Used
TB6-3&4	Pin26	_MN_X_1	Existing

ABBREVIATION

EX = EXISTING
TYP = TYPICAL
PLCS = PLACES
RGS = RIGID GALVANIZED STEEL
EVP = EMERGENCY VEHICLE PRE-EMPTION

KEY FOR ID NUMBERS FOR ITS DEVICES

0	0	5	X	X	#	#	#	#	#

- MILEPOST, WITHOUT DECIMAL POINT
- es = ELECTRONIC SURVEILLANCE (LOOP DETECTORS)
  vc = VIDEO CAMERA (CCTV)
  xf = TRANSFORMER
- STATE ROUTE

MICHIGAN ST - NB I-5 RAMP (005es16147)

(TRAFFIC DATA ACCUMULATION & RAMP METERING SYSTEM MOD-2)

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_I-5 MICHIGAN - NB_PS_IT&SN.dgn				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
TIME	10:25:13 AM						
DATE	3/23/2023				JOB NUMBER 22A049		
PLOTTED BY	rockz						
DESIGNED BY	Z. ROCK						
ENTERED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
CHECKED BY	G. BAGHAI						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

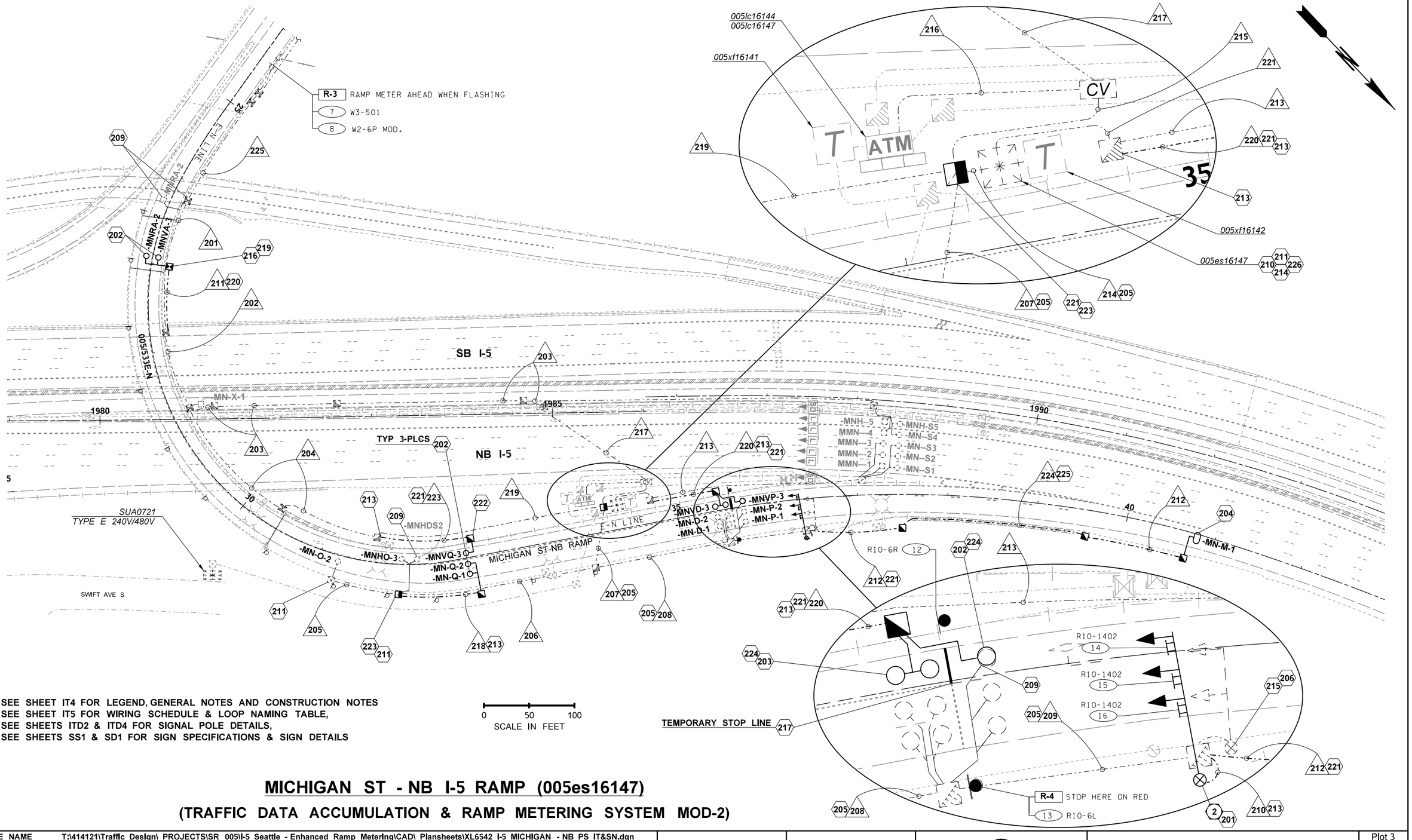
MICHAEL LEE FORBIS — STATE OF WASHINGTON — 32138 — REGISTERED PROFESSIONAL ENGINEER — Michael Forbis — SEE SHEET CT1 — DATE — P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS AND SIGNING PLAN

Plot 2
PLAN REF NO IT5
SHEET 12 OF 43 SHEETS



SEE SHEET IT4 FOR LEGEND, GENERAL NOTES AND CONSTRUCTION NOTES
SEE SHEET IT5 FOR WIRING SCHEDULE & LOOP NAMING TABLE,
SEE SHEETS ITD2 & ITD4 FOR SIGNAL POLE DETAILS,
SEE SHEETS SS1 & SD1 FOR SIGN SPECIFICATIONS & SIGN DETAILS

0 50 100
SCALE IN FEET

MICHIGAN ST - NB I-5 RAMP (005es16147)

(TRAFFIC DATA ACCUMULATION & RAMP METERING SYSTEM MOD-2)

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_I-5 MICHIGAN - NB_PS_IT&SN.dgn				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
TIME	10:25:15 AM						
DATE	3/23/2023				JOB NUMBER 22A049		
PLOTTED BY	rockz						
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	G. BAGHAI						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

MICHAEL LEE FORBIS — STATE OF WASHINGTON — 22136 — REGISTERED PROFESSIONAL ENGINEER
Michael Forbis
SEE SHEET CT1 DATE
P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS AND SIGNING PLAN

Plot 3
PLAN REF NO IT6
SHEET 13 OF 43 SHEETS

CONSTRUCTION NOTES:

301 INSTALL SIGNAL POLE FOUNDATION, TYPE II SIGNAL POLE WITH MASTARM, TWO 3-SECTION (3-12") VEHICLE SIGNAL HEADS WITH BACK-PLATES AND ALL ASSOCIATED EQUIPMENT IN ACCORDANCE WITH TRAFFIC DATA ACCUMULATION AND RAMP METERING SYSTEM SPECIAL PROVISION AND ITS DETAIL SHEETS ITD3 & ITD4.

302 INSTALL TYPE R1 INDUCTION LOOP VEHICLE DETECTOR IN ACCORDANCE WITH THE INDUCTION LOOP VEHICLEDETECTOR SPECIAL PROVISIONS AND THE ITS DETAIL SHEETS ITD5 - ITD7.

303 INSTALL TYPE R2 INDUCTION LOOP VEHICLE DETECTOR IN ACCORDANCE WITH THE INDUCTION LOOP VEHICLE DETECTOR SPECIAL PROVISIONS AND THE ITS DETAIL SHEETS ITD5 - ITD7.

304 INSTALL TYPE WR INDUCTION LOOP VEHICLE DETECTOR IN ACCORDANCE WITH THE INDUCTION LOOP VEHICLE DETECTOR SPECIAL PROVISIONS AND THE ITS DETAIL SHEETS ITD5 - ITD7.

305 DISCONNECT AND REMOVE THE EXISTING 5C CABLE BACK TO THE CABINET. THE 5C CABLE AND THE SIGNAL HEADS SHALL NOT BE DISCONNECTED UNTIL THE SIGNAL STANDARD TYPE II ASSEMBLY IS INSTALLED, TESTED AND OPERATIONAL.

306 REMOVE THE EXISTING SIGNAL HEADS (2) AND DELIVER TO THE SIGNAL SHOP IN ACCORDANCE WITH THE REMOVAL AND DELIVERY OF EXISTING ITS EQUIPMENT SPECIAL PROVISION. EXISTING TYPE 1 SIGNAL POLE AND FOUNDATION TO REMAIN.

307 REPLACE THE EXISTING TYPE 1 JUNCTION BOX WITH A TYPE 2 JUNCTION BOX.

308 REPLACE LOOP LABELS ON CABINET DISPLAY PANEL ACCORDING TO THE LOOP NAMING TABLE ON ITS SHEET IT8, SPECIAL PROVISIONS, AND STANDARD PLAN J-81.10, NOTE D3.

309 REPLACE CONDUIT STUB-OUT INTO JUNCTION BOX AS NECESSARY TO MEET THE REQUIREMENTS OF TABLE A OF ITD7. SPLICE NEW LOOP WIRES TO THE NEW OR EXISTING DETECTOR LEAD-IN. LABEL NEW LOOP AT SPLICE AND IN THE CABINET ACCORDING TO LOOP NAMING TABLE ON SHEET IT8.

310 TERMINATE ALL DETECTOR LEAD-IN(S), SIGNAL HEADS, AND ALL OTHER NECESSARY CABLES IN EXISTING RAMP METER CABINET.

311 RELABEL EXISTING LOOPS AT SPLICES AND IN THE CABINET ACCORDING TO LOOP NAMING TABLE ON SHEET IT8.

312 ROUTE NEW CONDUIT INTO EXISTING JUNCTION BOX.

313 INSTALL ONE LOOP AMPLIFIER FOR EACH NEW LOOP INSTALLED OR REPLACED IN ACCORDANCE WITH THE SPECIAL PROVISION.

314 ABANDON EXISTING LOOP(S). DISCONNECT AND REMOVE DETECTOR LEAD-IN BETWEEN ABANDONED LOOP SPLICE AND CABINET.

315 TERMINATE EXISTING DETECTOR LEAD-IN FOR LOOP "-MNHD-1" IN THE EXISTING RAMP METER CABINET AS "-MNVQ-2". RELABEL LOOP AT SPLICE AND IN THE CABINET ACCORDING TO LOOP NAMING TABLE ON SHEET IT8.

316 HAND DIGGING AT THIS LOCATION IS REQUIRED TO MINIMIZE IMPACT TO THE TREE ROOTS. SEE "VEGETATION PROTECTION" NOTES ON TESC PLANS.

317 CONTRACTOR SHALL INSTALL TEMPORARY STOP LINE PER STANDARD SPECIFICATIONS 8-23.3(4)A ACROSS THE HOV LANE AS SOON AS THE NEW TYPE 2 RAMP METERING SYSTEM IS MADE OPERATIONAL.

ITS & SIGN LEGEND

Existing	New		Existing	New	
		Type 1 Junction Box			Beam Guardrail
		Type 2 Junction Box			Retaining Wall
		Type 3 Junction Box			Noise Wall
		Type 4 Junction Box			Stop Line
		Type 8 Junction Box			Sign & Post
		Nema Box			Mast Arm Sign
CV		ITS Cable Vault			
PB		ITS Pull Box			
T		Transformer Cabinet			
		CCTV Cabinet			
		Controller/Ramp Meter Cabinet			
		Electrical Service Cabinet			
		R1 Induction Loop			
		R2 Induction Loop			
		WR Induction Loop			
		CCTV Camera			
		Conduit			
		Advance Warning Sign			
		Ramp Meter Signal Head Type 1			
		Type 2 Ramp Meter Signal Standard			

Symbols

- # — Wire Note
- # — Signal Pole Number
- # — Construction Note
- X — Sign Installation Symbol
- R-___ — Sign Removal Symbol

GENERAL NOTES

1. THE LOCATIONS OF FEATURES SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR AND BE APPROVED BY THE ENGINEER.
2. ALIGNMENTS AND STATIONINGS PROVIDED ARE FOR REFERENCE ONLY.
3. IN ALL JUNCTION BOXES THAT WORK WILL BE DONE, THE CONTRACTOR SHALL PROTECT ALL CONDUIT OPENING, REMOVE ALL DEBRIS USING "VACTOR" VACUUM TRUCK AND DIRT 6" BELOW THE BOX AND INSTALL CRUSHED SURFACING BASE COURSE IN THE BOTTOM OF JUNCTION BOXES PER STANDARD PLAN OR REMOVE AND RESET THE JUNCTION BOX.
4. IN ALL PULL BOXES AND CABLE VAULTS THAT WORK WILL BE DONE, THE CONTRACTOR SHALL PROTECT ALL CONDUIT OPENING, REMOVE ALL DEBRIS AND CLEAN VAULTS.

NE 50TH ST - NB I-5 RAMP (005es16977)

(TRAFFIC DATA ACCUMULATION & RAMP METERING SYSTEM MOD-3)

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_I-5_50TH - NB_PS_IT&SN.dgn				
TIME	10:31:41 AM			REGION NO. 10	STATE WASH
DATE	3/23/2023				FED.AID PROJ.NO.
PLOTTED BY	rockz			JOB NUMBER 22A049	
DESIGNED BY	Z. ROCK			CONTRACT NO.	LOCATION NO.
ENTERED BY	Z. ROCK				
CHECKED BY	G. BAGHAI				
PROJ. ENGR.	C. SANTIAGO				
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY	

P.E. STAMP BOX — DATE

MICHAEL LEE FORBIS · STATE OF WASHINGTON · 32138 · REGISTERED PROFESSIONAL ENGINEER

Michael Forbis

SEE SHEET CT1 — DATE

P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS AND SIGNING PLAN

Plot 1

PLAN REF NO IT7

SHEET 14 OF 43 SHEETS

WIRING SCHEDULE

RUN NO.	EXISTING CONDUIT	NEW CONDUIT	EXISTING CONDUCTOR	NEW CONDUCTOR	REMARK
301	1.5"		1-3C		ADVANCE WARNING SIGNS
302	1.5"		1-3C		ADVANCE WARNING SIGNS
			1-2C(SH)		DETECTOR LEAD-IN (R)
				2-2C(SH)	DETECTOR LEAD-IN
303	2"		1-3C		ADVANCE WARNING SIGNS
			2-2C(SH)		DETECTOR LEAD-IN
			1-2C(SH)		DETECTOR LEAD-IN (R)
				2-2C(SH)	DETECTOR LEAD-IN
304		2"		1-2C(SH)	DETECTOR LEAD-IN
305		2"		2-5C	SIGNAL HEADS
306		2"		2-5C	SIGNAL HEADS
				1-2C(SH)	DETECTOR LEAD-IN
307	2"		1-5C (R)		RAMP METER SIGNALS (REMOVE 1-5C AFTER NEW RAMP METER TURN ON)
308	2"		2-48 SMFO		DATA/VIDEO DISTRIBUTION
309	2.5"		1-5C (R)		RAMP METER SIGNALS (REMOVE 1-5C AFTER NEW RAMP METER TURN ON)
			1-2C(SH)		DETECTOR LEAD-IN (R)
			2-2C(SH)		DETECTOR LEAD-IN (R)
				2-5C	SIGNAL HEADS
				3-2C(SH)	DETECTOR LEAD-IN
310	2"		1-5C (R)		RAMP METER SIGNALS (REMOVE 1-5C AFTER NEW RAMP METER TURN ON)
			1-2C(SH)		DETECTOR LEAD-IN (R)
			2-2C(SH)		DETECTOR LEAD-IN (R)
				2-5C	SIGNAL HEADS
				3-2C(SH)	DETECTOR LEAD-IN
	2"		1-3C		ADVANCE WARNING SIGNS
			2-2C(SH)		DETECTOR LEAD-IN
			1-2C(SH)		DETECTOR LEAD-IN (R)
				2-2C(SH)	DETECTOR LEAD-IN
311	2"		1-5C (R)		RAMP METER SIGNALS (REMOVE 1-5C AFTER NEW RAMP METER TURN ON)
			1-2C(SH)		DETECTOR LEAD-IN (R)
			2-2C(SH)		DETECTOR LEAD-IN (R)
				2-5C	SIGNAL HEADS
				5-2C(SH)	DETECTOR LEAD-IN
	2"		1-3C		ADVANCE WARNING SIGNS
			2-2C(SH)		DETECTOR LEAD-IN
			1-2C(SH)		DETECTOR LEAD-IN (R)
				2-2C(SH)	DETECTOR LEAD-IN
312	2"		1-24 PPP		PRETERM STUB
313	2"			2-2C(SH)	DETECTOR LEAD-IN
314 - 399					NOT USED

(R) - REMOVE EXISTING CABLES.

LOOP NAMING TABLE - NE 50th St-NB I-5 (005es16977)

Terminal	Loop #	Loop Name	Remarks
TB2-1&2	Pin1	_MNRA_1	Existing
TB2-3&4	Pin2	_MN_Q_1	Existing
TB2-5&6	Pin3	_MN_D_1	Existing
TB2-7&8	Pin4	_MN_P_1	Existing
TB2-9&10	Pin5	_MN_M_1	New Loop
TB2-11&12	Pin6	_MNVA_2	New Loop
TB3-1&2	Pin7	_MNVQ_2	Existing _MNHD_2, Renamed
TB3-3&4	Pin8	_MNVD_2	New Loop
TB3-5&6	Pin9	_MNVP_2	Existing _MNHP_2, Renamed
TB3-7&8	Pin10	MMN___1	
TB3-9&10	Pin11	MMN___2	
TB3-11&12	Pin12	MMN___3	
TB4-1&2	Pin13	MMN___4	
TB4-3&4	Pin14		
TB4-5&6	Pin15		
TB4-7&8	Pin16		
TB4-9&10	Pin17		
TB4-11&12	Pin18	_RN___1	
TB5-1&2	Pin19	_RN___2	
TB5-3&4	Pin20	_RN___3	
TB5-5&6	Pin21		
TB5-7&8	Pin22		
TB5-9&10	Pin23		

KEY FOR ID NUMBERS FOR ITS DEVICES

5	2	6	X	X	#	#	#	#	#

- # # # # # — MILEPOST, WITHOUT DECIMAL POINT
- X X — es = ELECTRONIC SURVEILLANCE (LOOP DETECTORS); vc = VIDEO CAMERA (CCTV); xf = TRANSFORMER
- 6 — STATE ROUTE 526

ABBREVIATION

EX = EXISTING
TYP = TYPICAL
PLCS = PLACES
RGS = RIGID GALVANIZED STEEL

NE 50TH ST - NB I-5 RAMP (005es16977)

(TRAFFIC DATA ACCUMULATION & RAMP METERING SYSTEM MOD-3)

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_I-5_50TH - NB_PS_IT&SN.dgn				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
TIME	10:31:41 AM						
DATE	3/23/2023						
PLOTTED BY	rockz						
DESIGNED BY	Z. ROCK				JOB NUMBER 22A049		
ENTERED BY	Z. ROCK						
CHECKED BY	G. BAGHAI				CONTRACT NO.		LOCATION NO.
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

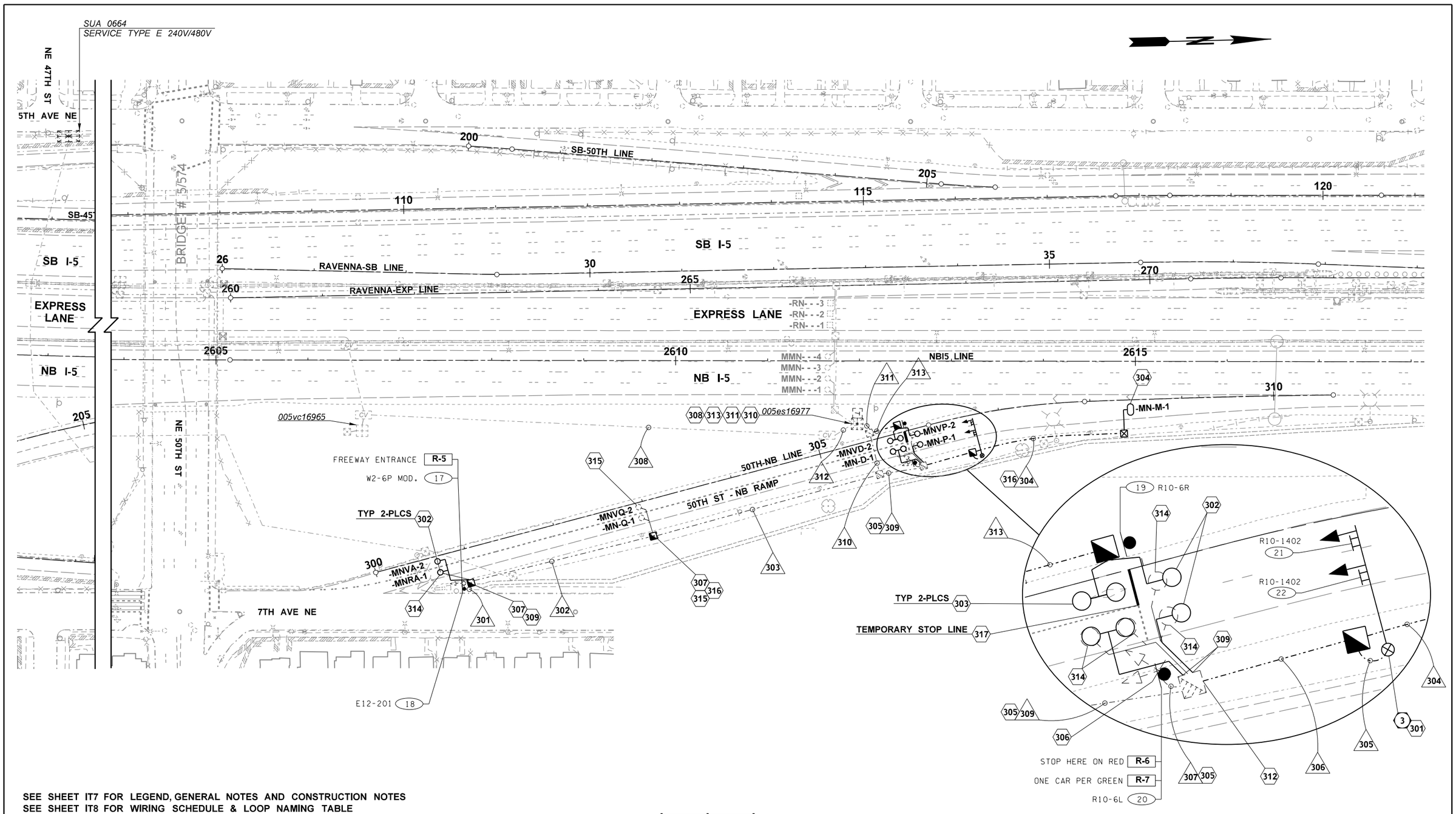
MICHAEL LEE FORBIS — STATE OF WASHINGTON — 32136 — REGISTERED PROFESSIONAL ENGINEER — Michael Forbis
SEE SHEET CT1 — DATE
P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS AND SIGNING PLAN

Plot 2
PLAN REF NO IT8
SHEET 15 OF 43 SHEETS



SEE SHEET IT7 FOR LEGEND, GENERAL NOTES AND CONSTRUCTION NOTES
SEE SHEET IT8 FOR WIRING SCHEDULE & LOOP NAMING TABLE
SEE SHEETS ITD3 & ITD4 FOR SIGNAL POLE DETAILS,
SEE SHEETS SS1 & SD1 FOR SIGN SPECIFICATIONS & SIGN DETAILS

NE 50TH ST - NB I-5 RAMP (005es16977)

(TRAFFIC DATA ACCUMULATION & RAMP METERING SYSTEM MOD-3)

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_I-5_50TH - NB_PS_IT&SN.dgn				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
TIME	10:31:43 AM						
DATE	3/23/2023						
PLOTTED BY	rockz				JOB NUMBER 22A049		
DESIGNED BY	Z. ROCK						
ENTERED BY	Z. ROCK						
CHECKED BY	G. BAGHAI				CONTRACT NO.		LOCATION NO.
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

MICHAEL LEE FORBIS — STATE OF WASHINGTON — 22138 — REGISTERED PROFESSIONAL ENGINEER
Michael Forbis
SEE SHEET CT1
DATE
P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

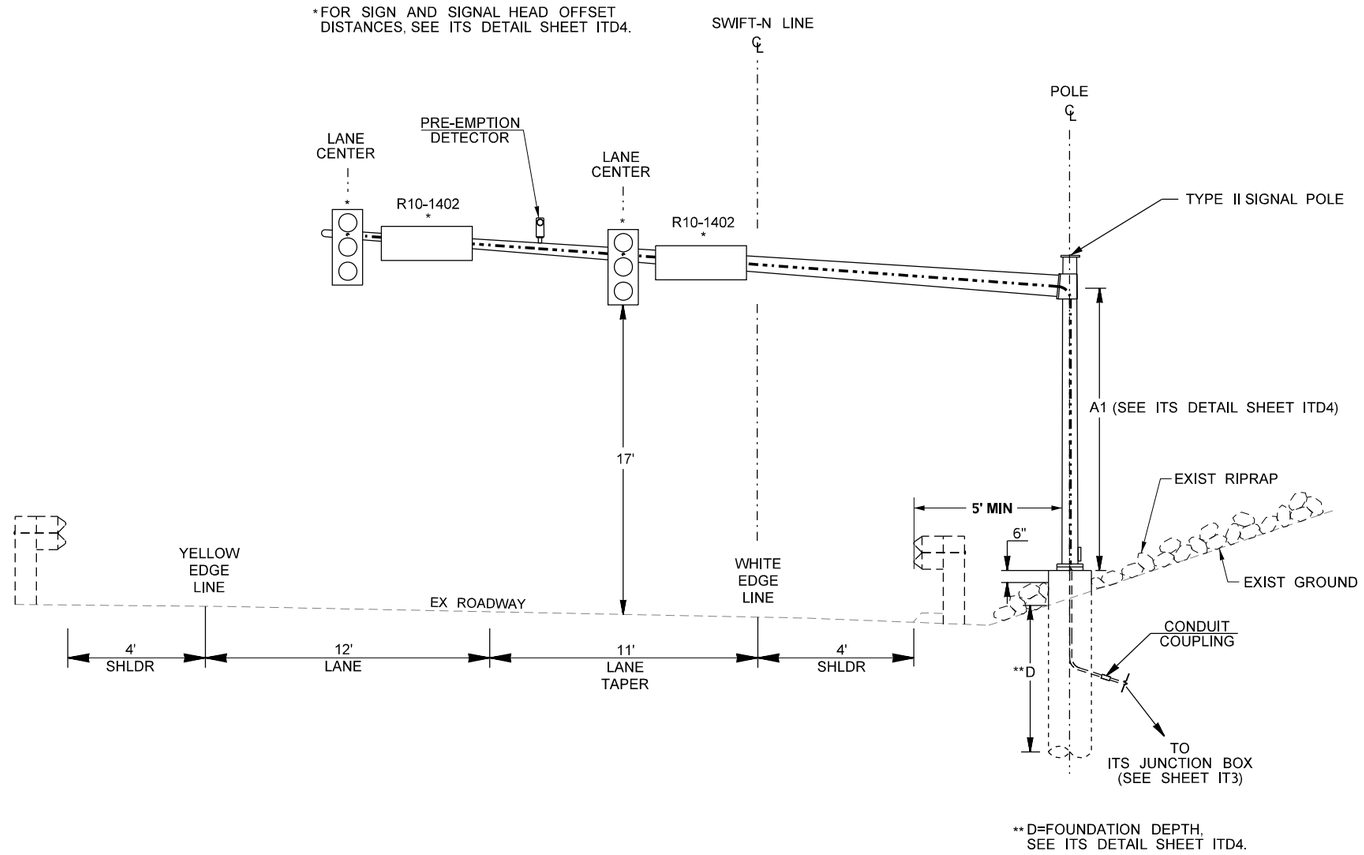
ITS AND SIGNING PLAN

Plot 3
PLAN REF NO IT9
SHEET 16 OF 43 SHEETS

SIGNAL HEAD DISPLAY NOTES:

1. ALL VEHICLE HEADS SHALL HAVE 12" LENSES.
2. ALL VEHICLE HEADS SHALL BE INSTALLED ON TYPE "M" MOUNTING.
3. ALL VEHICLE HEADS SHALL HAVE BACKPLATE.

VEHICLE SIGNAL HEAD



** D=FOUNDATION DEPTH, SEE ITS DETAIL SHEET ITD4.

SWIFT-N LINE 20+75 (RT)
LOOKING AHEAD ON STATION (NORTH)

SEE SHEET IT1 & IT2 FOR GENERAL NOTES, CONSTRUCTION NOTES & WIRE NOTES
SEE SHEET SS1 & SD1 FOR SIGN SPECIFICATIONS & SIGN DETAILS

NOT TO SCALE

SWIFT AVE S - NB I-5 RAMP

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_ITD.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	10:48:26 AM				10	WASH	
DATE	3/23/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	G. BAGHAI						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

MICHAEL LEE FORBIS · STATE OF WASHINGTON · 32138 · REGISTERED PROFESSIONAL ENGINEER

SEE SHEET CT1 — DATE

P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS DETAILS

Plot 1

PLAN REF NO
ITD1

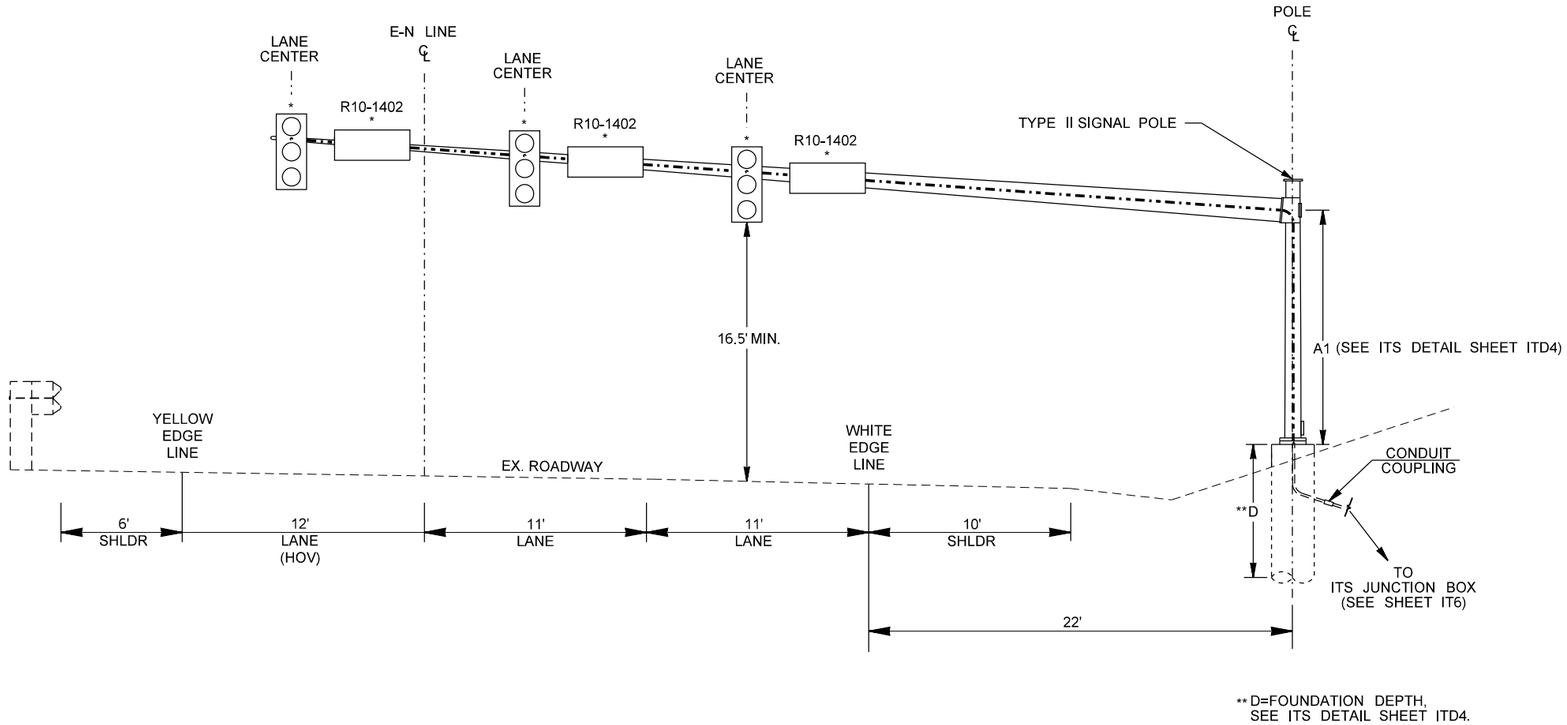
SHEET 17 OF 43 SHEETS

SIGNAL HEAD DISPLAY NOTES:

1. ALL VEHICLE HEADS SHALL HAVE 12" LENSES.
2. ALL VEHICLE HEADS SHALL BE INSTALLED ON TYPE "M" MOUNTING.
3. ALL VEHICLE HEADS SHALL HAVE BACKPLATE.

VEHICLE SIGNAL HEAD

*FOR SIGN AND SIGNAL HEAD OFFSET DISTANCES, SEE ITS DETAIL SHEET ITD4.



** D=FOUNDATION DEPTH, SEE ITS DETAIL SHEET ITD4.

E-N LINE 36+35 (43' RT)
LOOKING AHEAD ON STATION (NORTH)

SEE SHEET IT4 & IT5 FOR GENERAL NOTES, CONSTRUCTION NOTES & WIRE NOTES
SEE SHEET SS1 & SD1 FOR SIGN SPECIFICATIONS & SIGN DETAILS

NOT TO SCALE

S MICHIGAN ST - NB I-5 RAMP

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_ITD.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	10:48:26 AM				10	WASH	
DATE	3/23/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	G. BAGHAI						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

MICHAEL LEE FORBIS, STATE OF WASHINGTON, 52138, REGISTERED PROFESSIONAL ENGINEER — Michael Forbis — SEE SHEET CT1 — DATE — P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS DETAILS

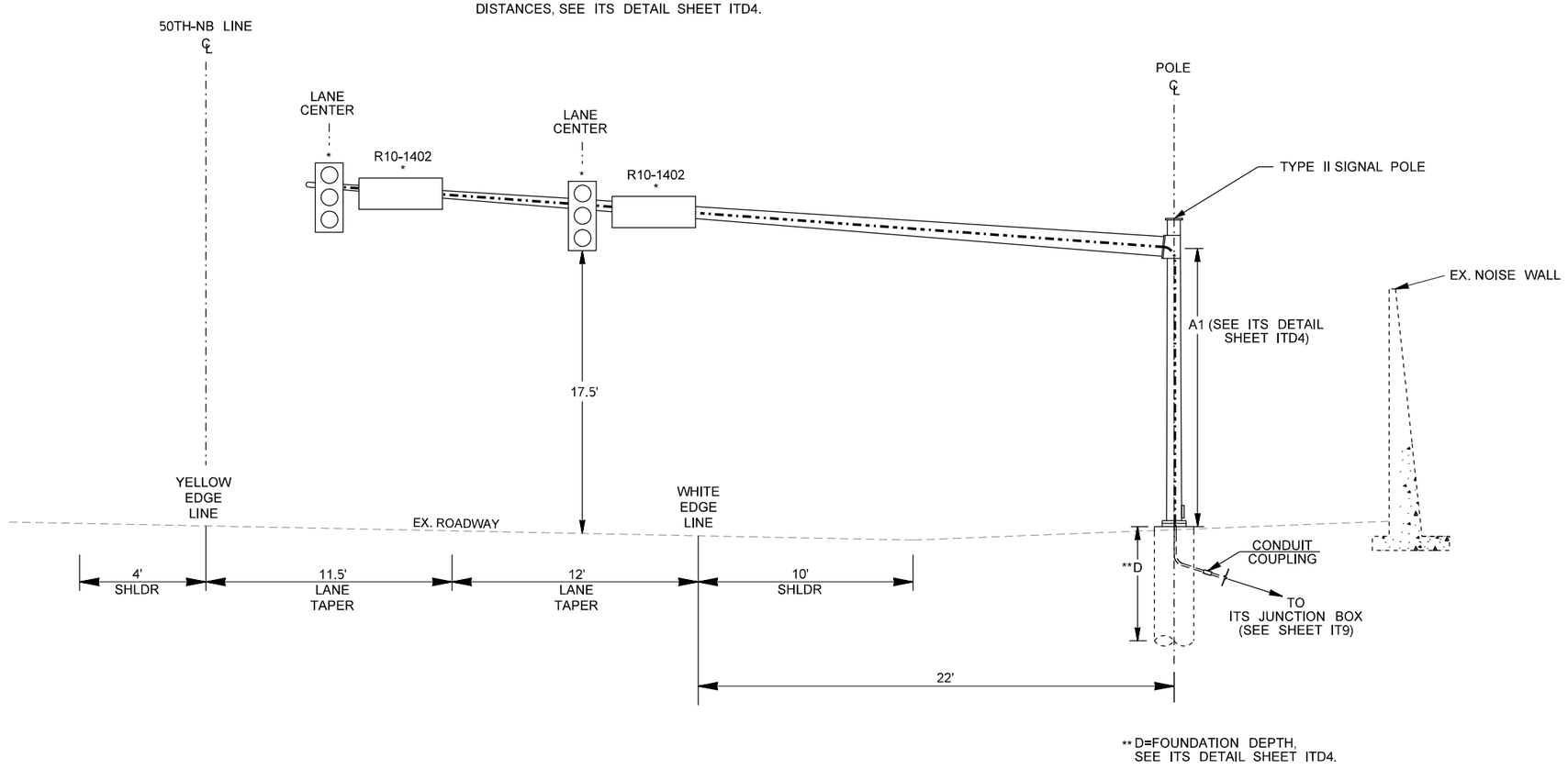
Plot 2
PLAN REF NO ITD2
SHEET 18 OF 43 SHEETS

SIGNAL HEAD DISPLAY NOTES:

1. ALL VEHICLE HEADS SHALL HAVE 12" LENSES.
2. ALL VEHICLE HEADS SHALL BE INSTALLED ON TYPE "M" MOUNTING.
3. ALL VEHICLE HEADS SHALL HAVE BACKPLATE.

VEHICLE SIGNAL HEAD

R
Y
G



** D=FOUNDATION DEPTH, SEE ITS DETAIL SHEET ITD4.

50TH-NB LINE 306+70 (RT)
LOOKING AHEAD ON STATION (NORTH)

SEE SHEET IT7 & IT8 FOR GENERAL NOTES, CONSTRUCTION NOTES & WIRE NOTES
SEE SHEET SS1 & SD1 FOR SIGN SPECIFICATIONS & SIGN DETAILS

NOT TO SCALE

NE 50TH ST - NB RAMP

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_ITD.dgn				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
TIME	10:48:27 AM						
DATE	3/23/2023						
PLOTTED BY	rockz						
DESIGNED BY	Z. ROCK				JOB NUMBER 22A049		
ENTERED BY	Z. ROCK						
CHECKED BY	G. BAGHAI				CONTRACT NO.		LOCATION NO.
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

DATE
P.E. STAMP BOX

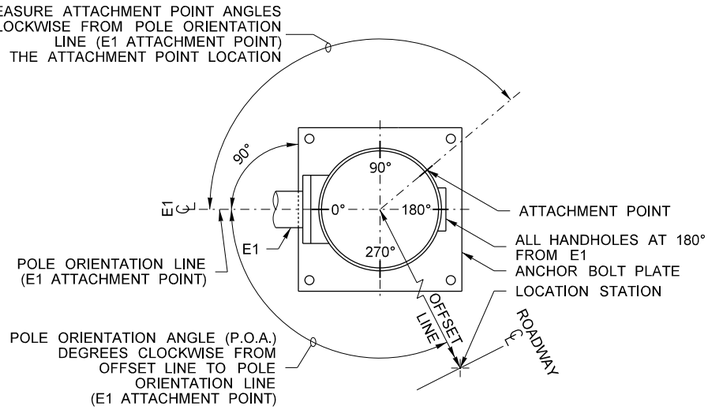
MICHAEL LEE FORBIS STATE OF WASHINGTON 32138 REGISTERED PROFESSIONAL ENGINEER
Michael Forbis
SEE SHEET CT1
DATE
P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS DETAILS

Plot 3
PLAN REF NO ITD3
SHEET 19 OF 43 SHEETS

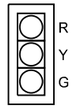


POLE ORIENTATION AND ATTACHMENT POINT DETAIL

LEGEND

a.	VEHICLE DISPLAY	f.	NOT USED
b.	SIGN	g.	NOT USED
c.	NOT USED	h.	NOT USED
d.	NOT USED	i.	NOT USED
e.	NOT USED	j.	HANDHOLE

SIGNAL DISPLAY NOTES



a

1. ALL VEHICLE HEADS SHALL BE ALUMINUM.
2. ALL LENSES SHALL BE 12" LED TYPE, WITH THE EXCEPTION OF THE LOWER SIGNAL HEAD ON THE TYPE RM SIGNAL, WHICH SHALL BE 8" LED TYPE.
3. ALL VISORS SHALL BE 12" ALUMINUM TUNNEL TYPE, WITH THE EXCEPTION OF THE LOWER SIGNAL HEAD ON THE TYPE RM SIGNAL, WHICH SHALL BE 8" ALUMINUM TYPE.
4. INSTALL BACKPLATES UNLESS OTHERWISE SPECIFIED IN THE PLANS. DO NOT INSTALL RETROREFLECTIVE TAPE ON RAMP METERS.

SIGNAL STANDARD IDENTIFICATION TAG DETAIL

STD. NO. XX	SIGNAL STANDARD NO.	STD. NO. 02
SRXXX, MP XXX.XX	STATE ROUTE AND MILE POST NO.	SR97, MP 069.09
MANUFACTURER APPROVED DWG. XXXXXX	APPROVED DRAWING NO.	MANUFACTURER APPROVED DWG. AB12345
FAB. X/XX/XXXX	FABRICATION DATE	FAB. 6/14/2002
		EXAMPLE

TAG NOTES:
CORROSION RESISTANT METAL TAG SECURED WITH (2) 0.125" RIVETS AS FOLLOWS:
- POLE SHAFT - LOCATED WITHIN 6" ABOVE HAND HOLE (TYPE II & III).
- SIGNAL AND LUMINAIRE MAST ARM (TYPE II & III) - LOCATED WITHIN 6" OF THE LUMINAIRE ARM AND THE POLE SHAFT CONNECTION POINT (TYPE III).

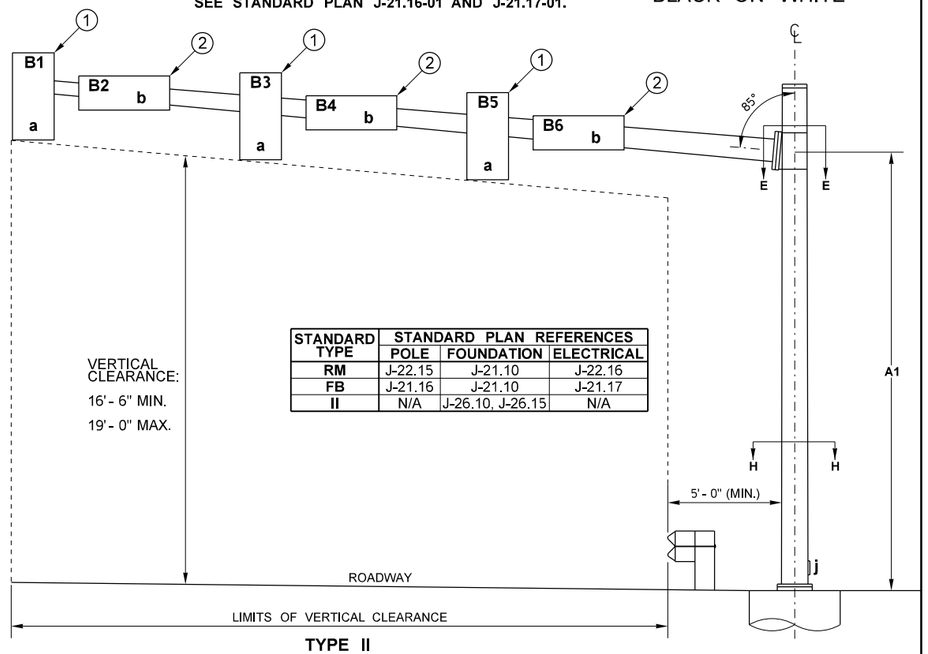
TEXT SHALL BE A MINIMUM OF 3/16" HIGH, STAMPED OR EMBOSSED.

MOUNTING NOTES:

1. MOUNTING COUPLING INSTALLED AT OFFSET INDICATED IN CHART.
2. FIELD INSTALLED. SEE **STANDARD PLAN G-30.10** FOR MOUNTING DETAILS.
3. FOR ADDITIONAL SIGN INSTALLATION DETAILS **SEE STANDARD PLAN J-21.16-01 AND J-21.17-01.**

SIGNS: B2, B4 & B6

R10-1402
BLACK ON WHITE



STANDARD TYPE	STANDARD PLAN REFERENCES		
	POLE	FOUNDATION	ELECTRICAL
RM	J-22.15	J-21.10	J-22.16
FB	J-21.16	J-21.10	J-21.17
II	N/A	J-26.10, J-26.15	N/A

TYPE II
SIGNAL STANDARD

SIGNAL STANDARD DETAIL CHART

STD. No.	SR No.	SR MILE POST	FIELD LOCATION: STATION	OFFSET	LT.	RT.	ELEV.*	P.O.A.	POLE TYPE	MOUNTING HEIGHT (FT): A1*	SIGNAL MAST ARM DATA: MAST ARM LENGTH	OFFSETS (FT) (Z) (POLE ℄ TO ATTACHMENT POINT): B1	B2	B3	B4	B5	B6	WINDLOAD AREAS (FT^2) (X)(Y): B1	B2	B3	B4	B5	B6	CALCULATED POLE XYZ (FT^3)	POLE ATTACHMENT POINT ANGLES (DEGREES): E1	H	FOUNDATION DESIGN XYZ (FT^3)	SOIL BEARING PRESSURE (PSF)	FOUNDATION DEPTH (FT): ALTERNATE 1 3' RD.	ALTERNATE 1 3' SQ.	ALTERNATE 1 4' RD.	ALTERNATE 2 2' RD.	ALTERNATE 2 2' SQ.	REMARKS
1	I-5	161.20	SWIFT-N LINE STA. 20+75	10'		X		0	II	17.25'	30'	27.5'	24'	15.25'	11.75'			9.2	6.0	9.2	6.0			608	0	180	1108**	1000	11'-0"	9'-0"	9'-0"			TYPE II SIGNAL STANDARD
2	I-5	161.45	EN LINE STA. 36+35	44'		X		0	II	17.31'	50'	48.5'	45'	37.25'	33.75'	27.5'	24'	9.2	6.0	9.2	6.0	9.2	6.0	1658	0	180	2158**	2500	11'-0"	7'-0"	7'-0"			TYPE II SIGNAL STANDARD
3	I-5	169.80	50TH-NB LINE STA. 306+70	45.5'		X		0	II	17.73'	42'	40'	36.5'	28.5'	25'			9.2	6.0	9.2	6.0			1000	0	180	1500**	2500	8'-0"	6'-0"	6'-0"			TYPE II SIGNAL STANDARD

* FIELD VERIFY VERTICAL CLEARANCE PRIOR TO ORDER SIGNAL STANDARDS.

** ADDITIONAL WINDLOAD (500 CU. FT) ADDED FOR FUTURE UNKNOWN LOAD(S).

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_ITD.dgn						
TIME	10:48:28 AM						
DATE	3/23/2023						
PLOTTED BY	rockz						
DESIGNED BY	Z. ROCK						
ENTERED BY	Z. ROCK						
CHECKED BY	G. BAGHAI						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

REGION NO.	STATE	FED.AID PROJ.NO.
10	WASH	
JOB NUMBER: 22A049		
CONTRACT NO.		LOCATION NO.

DATE
P.E. STAMP BOX

MICHAEL LEE FORBIS — STATE OF WASHINGTON — 52138 — REGISTERED PROFESSIONAL ENGINEER
Michael Forbis
SEE SHEET CT1
DATE
P.E. STAMP BOX

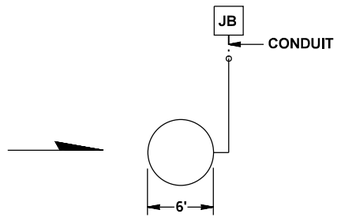
Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

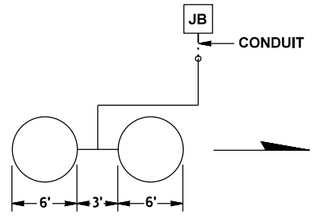
ITS DETAILS

Plot 4
PLAN REF NO: ITD4
SHEET 20 OF 43 SHEETS

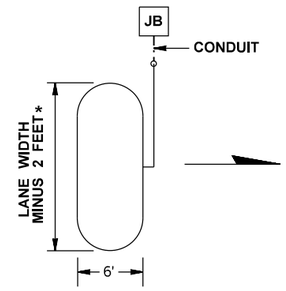
R1



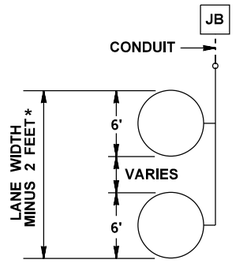
R2



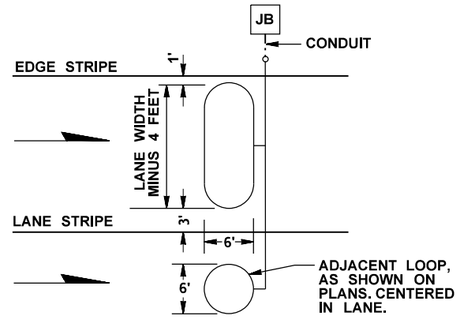
WR



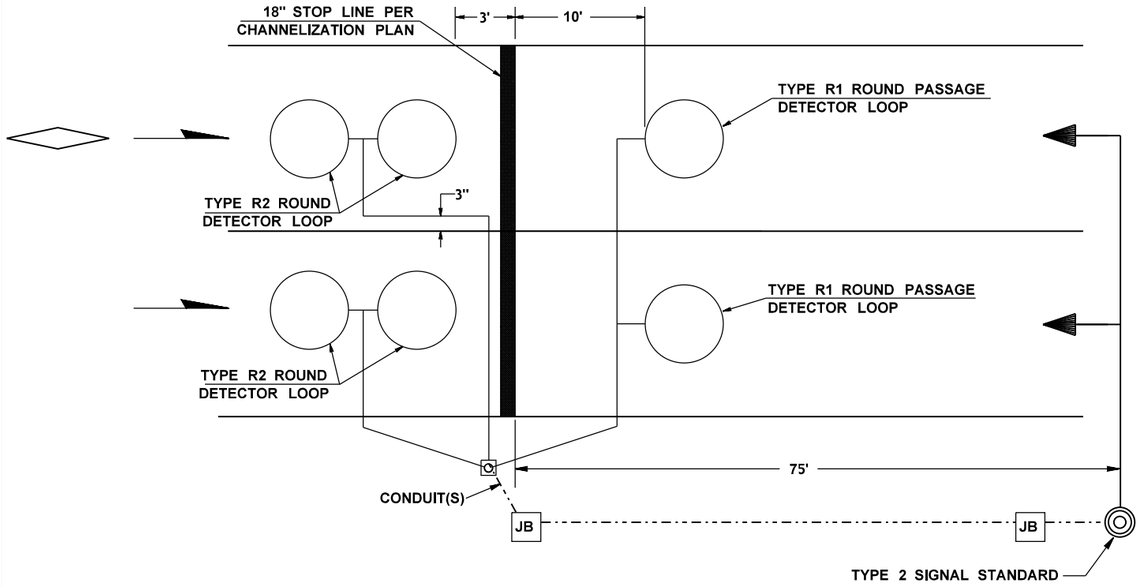
WR ALTERNATIVE



WR - DETAIL 2

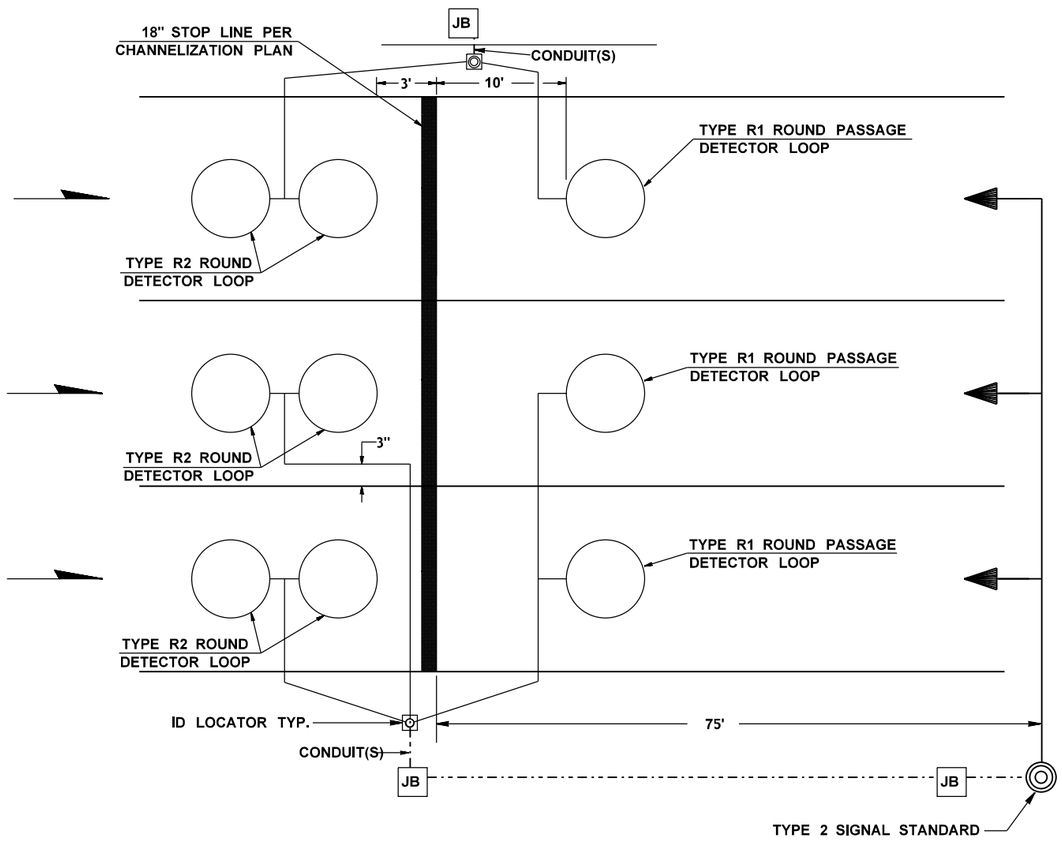


* IF WR LOOP IS NEXT TO A LOOP IN AN ADJACENT LANE, THE SIZE AND SPACING OF THE WR LOOP SHALL BE AS SHOWN IN "WR - DETAIL 2." FOR LANES WIDER THAN 12 FEET



TYPE 2 SIGNAL - TWO-LANE RAMP METER LOOP LAYOUT DETAIL

NOT TO SCALE



TYPE 2 SIGNAL - THREE-LANE RAMP METER LOOP LAYOUT DETAIL

LOOP DETAILS 1 OF 3

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_ITD.dgn				REGION NO. / STATE	FED.AID PROJ.NO.
TIME	10:48:29 AM				10 / WASH	
DATE	3/23/2023				JOB NUMBER	
PLOTTED BY	rockz				22A049	
DESIGNED BY	Z. ROCK				CONTRACT NO.	LOCATION NO.
ENTERED BY	Z. ROCK					
CHECKED BY	G. BAGHAI					
PROJ. ENGR.	C. SANTIAGO					
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY		

P.E. STAMP BOX — DATE

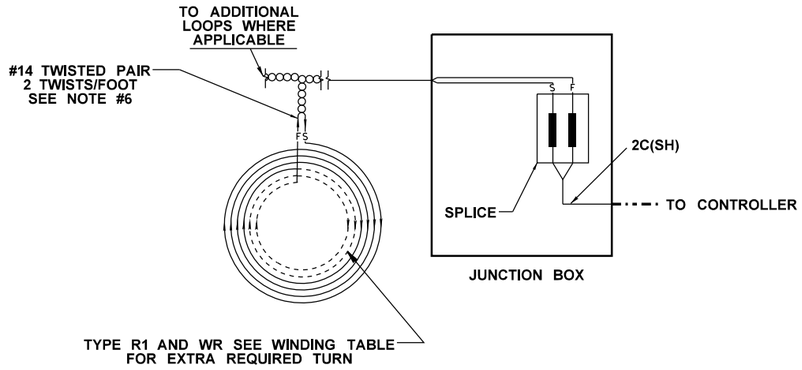
MICHAEL LEE FORBIS, STATE OF WASHINGTON, 22138, REGISTERED PROFESSIONAL ENGINEER — Michael Forbis — SEE SHEET CT1 — DATE — P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

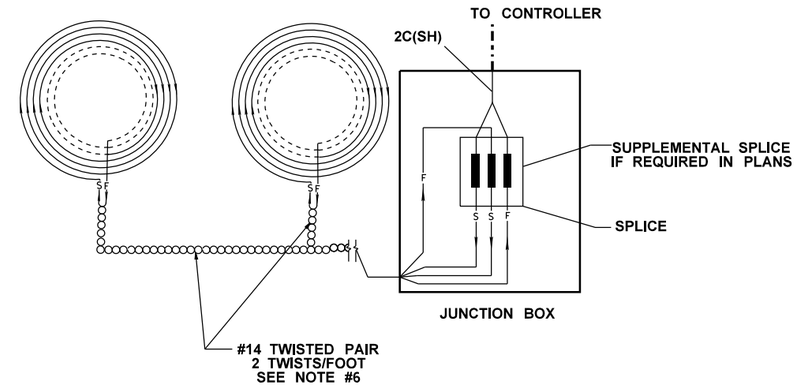
ITS DETAILS

Plot 5
PLAN REF NO ITD5
SHEET 21 OF 43 SHEETS

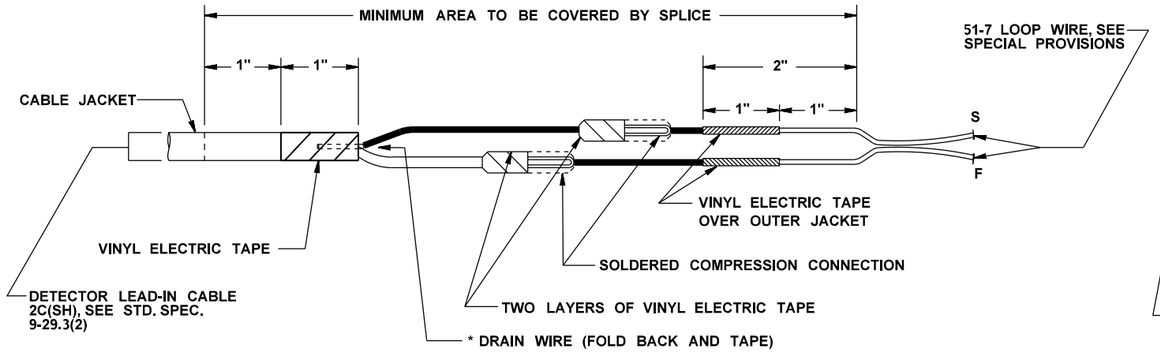


TYPE R1 AND TYPE WR INDUCTION LOOPS
LOOP WINDING DETAILS

TYPE R1 AND WR WINDING TABLE	
CONTROLLER TO LOOP DISTANCE (FT)	TURNS
0 - 400	4
401 - 600	5
601 +	6

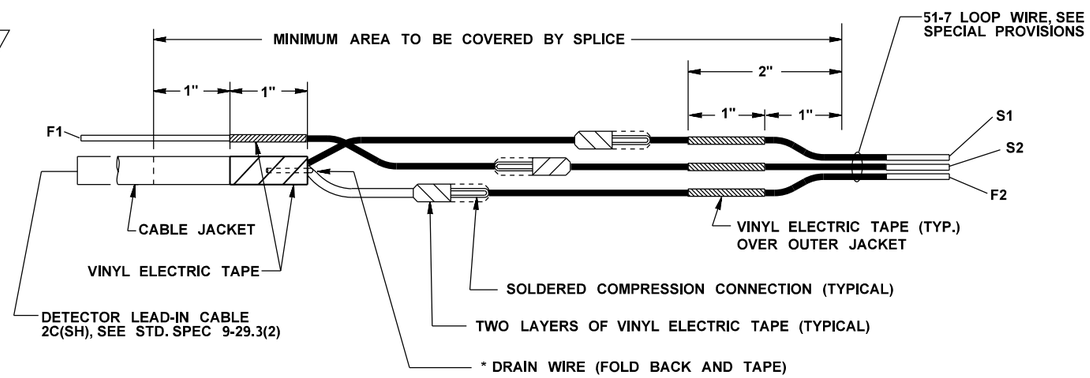


TYPE R2 AND MODIFIED TYPE WR INDUCTION LOOPS
LOOP WINDING DETAIL



* GROUND DRAIN WIRE AT AMPLIFIER ONLY.
SEE SPECIAL PROVISIONS FOR SPLICE MATERIAL.

TYPE R1 AND TYPE WR INDUCTION LOOPS
SPLICE DETAILS



* GROUND DRAIN WIRE AT AMPLIFIER ONLY.
SEE SPECIAL PROVISIONS FOR SPLICE MATERIAL.

TYPE R2 AND MODIFIED TYPE WR INDUCTION LOOPS
SPLICE DETAIL

NOTE: SPLICE KITS SHALL BE CENTERED ON CONDUCTORS AND SUFFICIENT SLACK SHALL BE PROVIDED THAT THE SPLICE CAN BE RAISED A MINIMUM OF 18" ABOVE GROUND LINE.

NOT TO SCALE

LOOP DETAILS 2 OF 3

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_ITD.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	10:48:29 AM				10	WASH	
DATE	3/23/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	G. BAGHAI						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

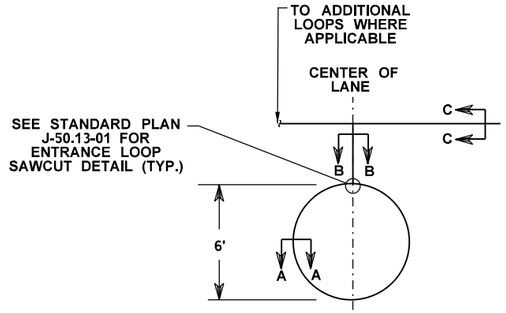
P.E. STAMP BOX — DATE

MICHAEL LEE FORBIS — STATE OF WASHINGTON — 32138 — REGISTERED PROFESSIONAL ENGINEER
SEE SHEET CT1
P.E. STAMP BOX — DATE

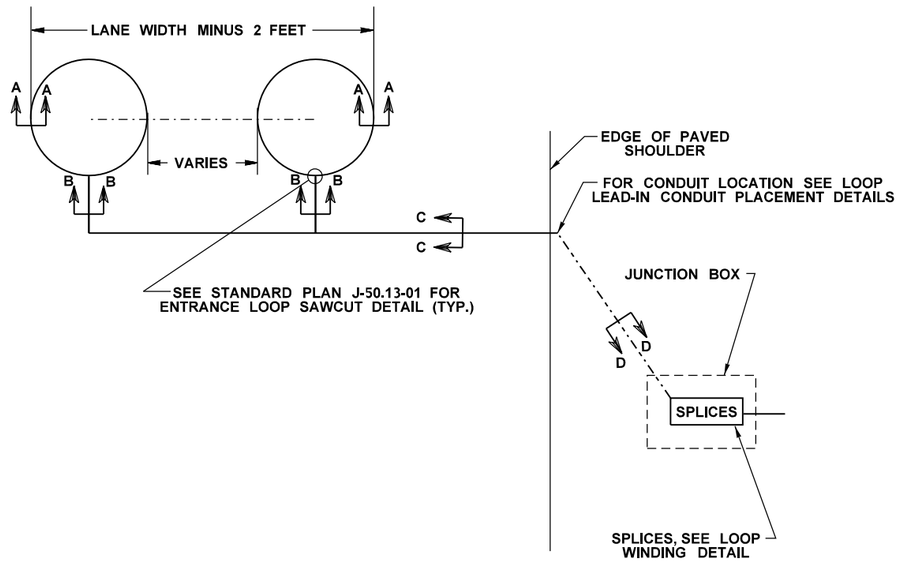
Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING
ITS DETAILS

Plot 6
PLAN REF NO ITD6
SHEET 22 OF 43 SHEETS



TYPE R1 INDUCTION LOOP



MODIFIED TYPE WR INDUCTION LOOP

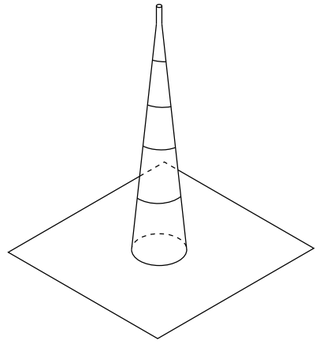
LOOP INSTALLATION NOTES

1. SEE STANDARD PLAN J-50.15 FOR ADDITIONAL LOOP DETAILS, CROSS SECTIONS, AND NOTES.
2. COMPLETE INSTALLATION AND TEST LOOP CIRCUITS OR COMBINATION LOOP CIRCUITS. SEE STANDARD SPECIFICATION 8-20.3(14)D.
3. SEE SPECIAL PROVISIONS FOR SEALANT TO ENCAPSULATE CONDUCTORS.
4. SEE SPECIAL PROVISIONS FOR 51-7 LOOP WIRE - #14 AWG.
5. SPLICE LOOP LEADS OR SUPPLEMENTAL SPLICE LEADS TO NEW OR EXISTING SHIELDED CABLE.
6. SEAL ENDS OF CONDUIT WITH ELECTRICAL FOAM.
7. IMSA WIRE END SHALL BE SEALED PRIOR TO USE OF RUBBER TAPE OR DUCT SEAL.
8. CABLE IDENTIFICATION SLEEVES SHALL BE VERIFIED BEFORE SPLICES ARE MADE.
9. THE NUMBER OF LOOP TURNS FOR R1 AND WR LOOPS VARY DEPENDING ON THE DISTANCE BETWEEN THE LOOPS AND THE CONTROLLER. NUMBER OF TURNS SHALL BE AS SHOWN IN THE WINDING TABLES IN THE ITS DETAIL.
10. LOOPS SHALL BE INSTALLED PRIOR THE FINAL LIFT OF HMA (ASPHALT).
11. IN THE NEW PAVEMENT AND PAVEMENT WITH HMA OVERLAY, LOOP "ID LOCATOR" SHALL BE INSTALLED ON THE TOP OF EACH STUB-OUT CONDUIT.
12. CENTER INDUCTION LOOP VEHICLE DETECTOR BETWEEN LANE LINES.
13. JUNCTION BOXES SHALL BE SIZED AS SHOWN IN THE ITS PLAN SHEETS.

ITS STUB-OUT CONDUIT SIZE WITH 51-7 LOOP WIRE

LOOP LEAD PAIRS	1-6	7-12
CONDUIT SIZE (MIN.)	2"	2-2"

TABLE A



RUBBER LOOP ID LOCATOR
3.5" SQUARE X 4" TALL
GRAY COLOR

NOT TO SCALE

LOOP DETAILS 3 OF 3

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_ITD.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	10:48:31 AM				10	WASH	
DATE	3/23/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	G. BAGHAI						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

MICHAEL LEE FORBIS — STATE OF WASHINGTON — 32138 — REGISTERED PROFESSIONAL ENGINEER — Michael Forbis

SEE SHEET CT1 DATE

P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS DETAILS

Plot 7

PLAN REF NO
ITD7

SHEET 23 OF 43 SHEETS

I-5 NB RAMP UNDER S ALBRO PL (LOOKING SOUTH)

(SEE IT3)

NOT TO SCALE

SEE SHEET IT1 FOR LEGEND, GENERAL NOTES AND CONSTRUCTION NOTES
SEE SHEET IT2 FOR WIRING SCHEDULE & LOOP NAMING TABLE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_ITD.dgn				REGION NO. / STATE	FED.AID PROJ.NO.
TIME	10:48:32 AM				10 WASH	
DATE	3/23/2023				JOB NUMBER	
PLOTTED BY	rockz				22A049	
DESIGNED BY	Z. ROCK				CONTRACT NO.	LOCATION NO.
ENTERED BY	Z. ROCK					
CHECKED BY	G. BAGHAI					
PROJ. ENGR.	C. SANTIAGO					
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY		

DATE
P.E. STAMP BOX

MICHAEL LEE FORBIS · STATE OF WASHINGTON · 52138 · REGISTERED PROFESSIONAL ENGINEER
Michael Forbis
SEE SHEET CT1
DATE
P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS DETAILS

Plot 8
PLAN REF NO
ITD8
SHEET 24 OF 43 SHEETS

I-5 SB MAINLINE UNDER MICHIGAN ST/S BAILEY ST - NB I-5 RAMP (LOOKING SOUTH)
(SEE IT6)

SEE SHEET IT4 FOR LEGEND, GENERAL NOTES AND CONSTRUCTION NOTES
SEE SHEET IT5 FOR WIRING SCHEDULE & LOOP NAMING TABLE

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_ITD.dgn						
TIME	10:48:35 AM				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
DATE	3/23/2023						
PLOTTED BY	rockz						
DESIGNED BY	Z. ROCK				JOB NUMBER 22A049		
ENTERED BY	Z. ROCK						
CHECKED BY	G. BAGHAI				CONTRACT NO.		LOCATION NO.
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

DATE
P.E. STAMP BOX

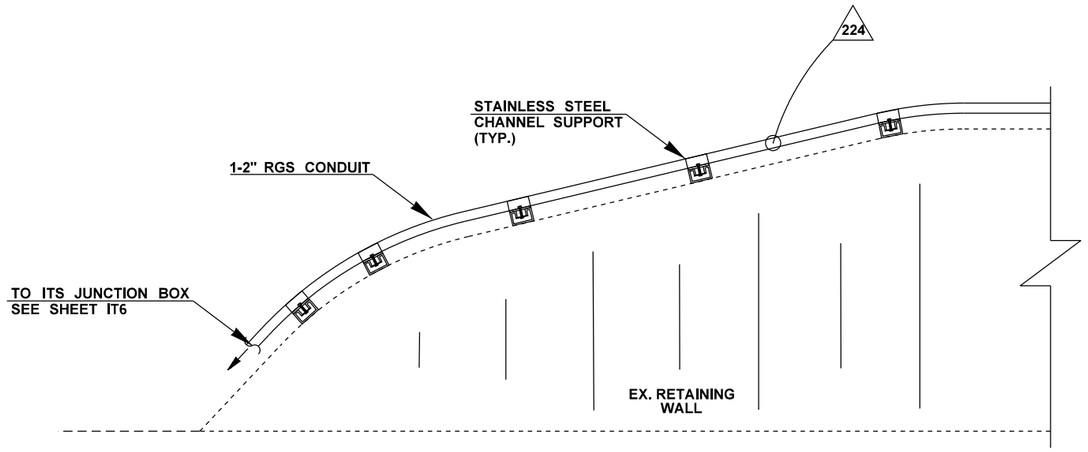
MICHAEL LEE FORBIS STATE OF WASHINGTON 32138 REGISTERED PROFESSIONAL ENGINEER
Michael Forbis
SEE SHEET CT1
DATE
P.E. STAMP BOX

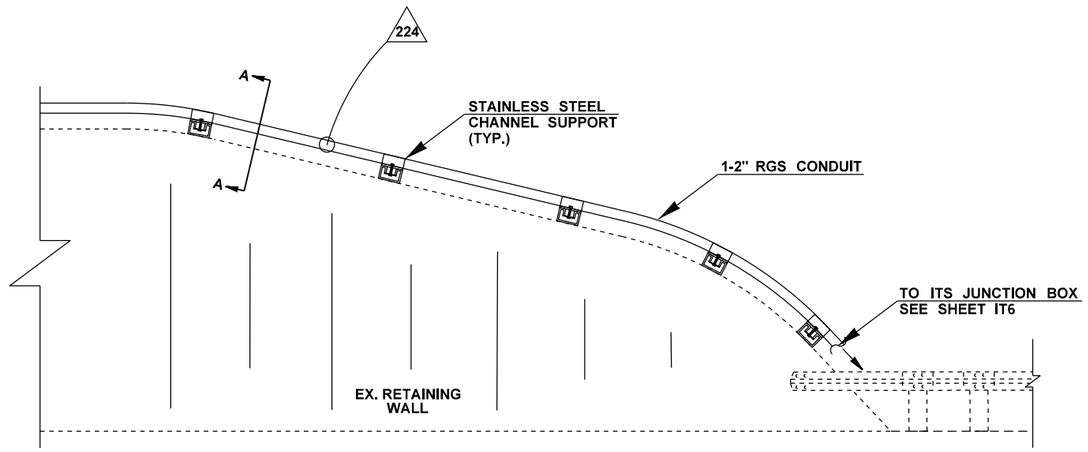
Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

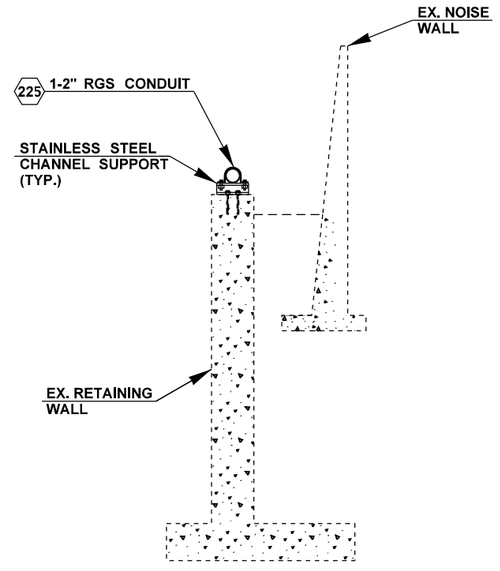
ITS DETAILS

Plot 9
PLAN REF NO ITD9
SHEET 25 OF 43 SHEETS





MICHIGAN ST - NB I-5 RAMP (LOOKING EAST)
(SEE IT6)



SECTION A-A

SEE SHEET IT4 FOR LEGEND, GENERAL NOTES AND CONSTRUCTION NOTES
SEE SHEET IT5 FOR WIRING SCHEDULE & LOOP NAMING TABLE

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_ITD.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	10:48:39 AM				10	WASH	
DATE	3/23/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	G. BAGHAI						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

DATE
P.E. STAMP BOX

MICHAEL LEE FORBIS — STATE OF WASHINGTON — 52138 — REGISTERED PROFESSIONAL ENGINEER
Michael Forbis
SEE SHEET CT1
DATE
P.E. STAMP BOX

Washington State
Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

ITS DETAILS

Plot 10
PLAN REF NO
ITD10
SHEET
26
OF
43
SHEETS

SIGN SPECIFICATIONS

SIGN NO.	SIGNCODE/ DESCRIPTION	STATION	SIGN SIZE X	SIGN SIZE Y	SHEETING TYPE	LETTER SIZE OR CODE	POST MATERIAL	POST SIZE	SIGN SUPPORT	POST LENGTH	CLEARANCE V	W	REMARKS
1	W2-6P MOD.	SWIFT-N RAMP 10+63, 28' RT	48"	18"	III OR IV	STANDARD							MOUNT SIGN ON EX. WOOD POST AND BELOW THE EX. SIGN
													"RAMP METERED AHEAD WHEN FLASHING". SEE SHEET SD1.
2	W2-6P MOD.	SWIFT-N RAMP 10+66, 18' RT	48"	18"	III OR IV	STANDARD							MOUNT SIGN ON EX. WOOD POST AND BELOW THE EX. SIGN
													"RAMP METERED AHEAD WHEN FLASHING". SEE SHEET SD1.
R-1	STOP HERE ON RED	SWIFT-N RAMP 20+00, 7' RT											REMOVE SIGN. EXISTING POLE TO REMAIN.
R-2	ONE CAR PER GREEN	SWIFT-N RAMP 20+00, 7' RT											REMOVE SIGN. EXISTING POLE TO REMAIN.
3	R10-6L	SWIFT-N RAMP 20+00, 7' RT	24"	36"	III OR IV	STANDARD					7'		MOUNT SIGN ON EX. RAMP METER POLE. BOTTOM OF SIGN SHALL
													BE 7' FROM TOP OF PAVEMENT.
4	R10-6R	SWIFT-N RAMP 20+00, 32' LT	24"	36"	III OR IV	STANDARD	STEEL	2.5" SQ	ST-4	13'	7'		INSTALL SIGN AND POST (BEHIND GUARDRAIL).
5	R10-1402	SWIFT-N RAMP 20+75, LT	48"	18"	IV	STANDARD					OVERHEAD		MOUNT SIGN ON MAST ARM.
6	R10-1402	SWIFT-N RAMP 20+75, LT	48"	18"	IV	STANDARD					OVERHEAD		MOUNT SIGN ON MAST ARM.
R-3	RAMP METER AHEAD WHEN...	EN 24+40, 15' LT											REMOVE SIGN. EXISTING POLE TO REMAIN.
7	W3-501	EN 24+40, 15' LT	48"	48"	III OR IV	STANDARD							MOUNT SIGN ON EX. BARRIER MOUNTED ELBOW POLE. BOTTOM OF SIGN
													SHALL BE 7' FROM TOP OF ROADWAY. SEE SHEET SD1.
8	W2-6P MOD.	EN 24+40, 15' LT	48"	18"	III OR IV	STANDARD							MOUNT SIGN ON EX. BARRIER MOUNTED ELBOW POLE AND BELOW NEW SIGN
													"RAMP METERED AHEAD WHEN FLASHING". SEE SHEET SD1.
9-11	NOT USED												SIGN NUMBERS 9 THROUGH 11 ARE NOT USED.
12	R10-6R	EN 35+60, 20' LT	24"	36"	III OR IV	STANDARD	STEEL	2.5" SQ	ST-4	13'	7'		INSTALL SIGN AND POST.
R-4	STOP HERE ON RED	EN 35+60, 36' RT											REMOVE SIGN AND POST.
13	R10-6L	EN 35+60, 36' RT	24"	36"	III OR IV	STANDARD	STEEL	2.5" SQ	ST-4	13'	7'		INSTALL SIGN AND POST.
14	R10-1402	EN 36+35, LT	48"	18"	IV	STANDARD					OVERHEAD		MOUNT SIGN ON MAST ARM. SEE SHEET ITD4.
15	R10-1402	EN 36+35, RT	48"	18"	IV	STANDARD					OVERHEAD		MOUNT SIGN ON MAST ARM. SEE SHEET ITD4.
16	R10-1402	EN 36+35, RT	48"	18"	IV	STANDARD					OVERHEAD		MOUNT SIGN ON MAST ARM. SEE SHEET ITD4.
R-5	FREEWAY ENTRANCE	50TH-N 300+90, 36' RT											REMOVE SIGN. EXISTING POLE TO REMAIN.
17	W2-6P MOD.	50TH-N 300+90, 36' RT	48"	18"	III OR IV	STANDARD							MOUNT SIGN ON EX. WOOD POST AND BELOW THE EX. SIGN
													"RAMP METERED AHEAD WHEN FLASHING".
18	E12-201	50TH-N 300+90, 42' RT	36"	24"	III OR IV	STANDARD	STEEL	2.5" SQ	ST-4	13'	7'		INSTALL SIGN AND POST.
19	R10-6R	50TH-N 305+98, 9' LT	24"	36"	III OR IV	STANDARD	STEEL	2.5" SQ	ST-4	13'	7'		INSTALL SIGN AND POST.
R-6	STOP HERE ON RED	50TH-N 305+98, RT											REMOVE SIGN. EXISTING POLE TO REMAIN.
R-7	ONE CAR PER GREEN	50TH-N 305+98, RT											REMOVE SIGN. EXISTING POLE TO REMAIN.
20	R10-6L	50TH-N 305+98, RT	24"	36"	III OR IV	STANDARD					7'		MOUNT SIGN ON EX. RAMP METER POLE. BOTTOM OF SIGN SHALL
													BE 7' FROM TOP OF PAVEMENT.
21	R10-1402	50TH-N 306+70, RT	48"	18"	IV	STANDARD					OVERHEAD		MOUNT SIGN ON MAST ARM.
22	R10-1402	50TH-N 306+70, RT	48"	18"	IV	STANDARD					OVERHEAD		MOUNT SIGN ON MAST ARM.

GENERAL NOTES

1. SEE ITS AND SIGNING PLANS FOR SIGN LOCATIONS.
2. POST LENGTHS SHOWN ARE APPROXIMATE. FINAL VALUES SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR PRIOR TO FABRICATION AND INSTALLATION.
3. FOR MOUNTING DETAILS SEE STANDARD PLAN SERIES "G".
4. FOR CODE REFERENCES AND STANDARD DETAILS SEE WASHINGTON STATE SIGN FABRICATION MANUAL. HTTP://WWW.WSDOT.WA.GOV/PUBLICATIONS/MANUALS/M55-05.HTM
5. ALL POSTS SHALL BE 2½" 12 GAGE PERFORATED SQUARE STEEL TUBE (PSST). FOR TYPE SB SUPPORT SEE STANDARD PLAN G-24.40. FOR TYPE ST-4 SUPPORT SEE STANDARD PLAN G-24.50
6. EDGE OF SIGN SHALL BE 2FT FROM BACK OF GUARDRAIL/ EDGE OF PAVEMENT. FOR ADDITIONAL INFOMRATION, SEE STANDARD PLAN G-24.50-04.

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_SN_SS1.dgn				REGION NO.	STATE	FED.AID PROJ.NO.		
TIME	11:47:30 AM				10	WASH			
DATE	3/16/2023				JOB NUMBER				
PLOTTED BY	rockz				22A049				
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.		
ENTERED BY	Z. ROCK								
CHECKED BY	C. WOO								
PROJ. ENGR.	C. SANTIAGO								
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY					

DATE
P.E. STAMP BOX

CHRISTIAN LOUIS SANTIAGO — STATE OF WASHINGTON — 56314 — REGISTERED PROFESSIONAL ENGINEER

SEE SHEET CT1
DATE
P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

SIGN SPECIFICATIONS

Plot 1

PLAN REF NO
SS1

SHEET 27 OF 43 SHEETS

SIGN DETAILS

R10-1402
TEXT 4C
BLACK TEXT ON
WHITE BACKGROUND

SIGNS NO. 5, 6, 14, 15, 16, 20 & 21

R10-6R
TEXT 5D
BLACK TEXT ON
WHITE BACKGROUND

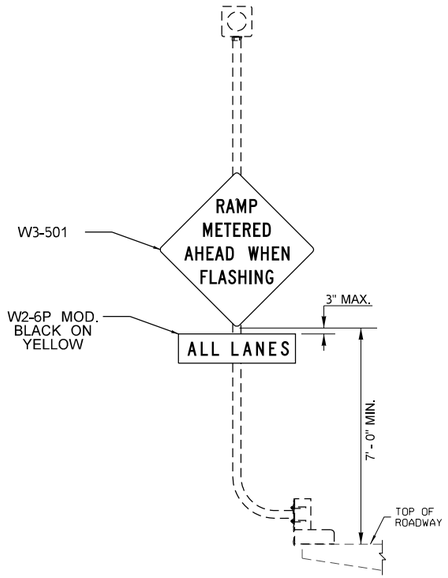
SIGNS NO. 4, 12 & 18

R10-6L
TEXT 5D
BLACK TEXT ON
WHITE BACKGROUND

SIGNS NO. 3, 13 & 19

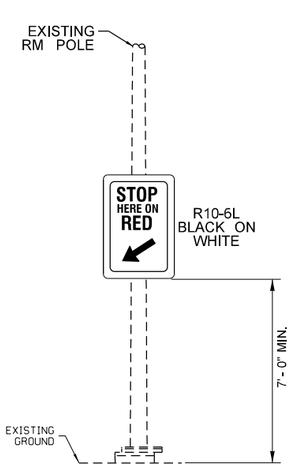
W2-6P MOD.
TEXT 6D
BLACK TEXT ON
YELLOW BACKGROUND

SIGNS NO. 1, 2, 7, 9, 11 & 17



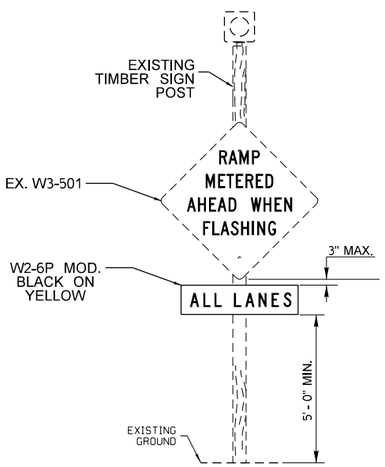
**EX. BARRIER MOUNTED
ELBOW SIGN SUPPORT**

SIGN NO. 7 & 8



**EX. TYPE RM
SIGNAL STANDARD**

SIGNS NO. 3, 13 & 19



**EX. TIMBER
SIGN POST**

SIGNS NO. 1, 2 & 17

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_SN_SD1.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	11:47:34 AM				10	WASH	
DATE	3/16/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

DATE
P.E. STAMP BOX

CHRISTIAN LOUIS SANTIAGO
STATE OF WASHINGTON
56314
REGISTERED
PROFESSIONAL ENGINEER

SEE SHEET CT1
DATE
P.E. STAMP BOX

Washington State
Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

SIGN DETAILS

Plot 1

PLAN REF NO
SD1

SHEET
28
OF
43
SHEETS

MINIMUM SHOULDER TAPER LENGTH = L/3 (feet)										
SHOULDER WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
8'	40	40	60	90	120	130	150	160	170	190
10'	40	60	90	90	150	170	190	200	220	240
USE A MINIMUM 3 DEVICES TAPER FOR SHOULDER LESS THEN 8'.										

MINIMUM SHOULDER TAPER LENGTH = L/3 (feet)										
SHOULDER WIDTH (feet)	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
8'	40	40	60	90	120	130	150	160	170	190
10'	40	60	90	90	150	170	190	200	220	240
USE A MINIMUM 3 DEVICES TAPER FOR SHOULDER LESS THEN 8'.										

SIGN SPACING = X (1)		
FREEWAYS & EXPRESSWAYS	55 / 70 MPH	1500' ±
RURAL HIGHWAYS	60 / 65 MPH	800' ±
RURAL ROADS	45 / 55 MPH	500' ±
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' ±
RURAL ROADS & URBAN ARTERIALS RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200' ± (2)
URBAN STREETS	25 MPH OR LESS	100' ± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R					
HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT > 22,000 lbs.		
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH
100'	123'	172'	74'	100'	150'

CLASS OF ROAD	WARNING SIGN SPACING IN FEET			TAPER LENGHT (L) IN FEET		CHANNELIZING DEVICE SPACING IN FEET (MAXIMUM)				WARNING SIGN MIN. SIZE IN INCHES
				LANE WIDTH		VEHICLE BARRACADES & DRUMS		OTHER**		
	X	X	X	10'	12'	TAPER (S)	TANGENT	TAPER (S)	TANGENT	
I	*			75	90	SPEED LIMIT	SPEED LIMIT X 2	15	30	30 X 30
II	150	150	75	150	200	SPEED LIMIT	SPEED LIMIT X 2	20	50	30 X 30
III	300	300	150	400	500	SPEED LIMIT	SPEED LIMIT X 2	30	80	48 X 48

ROAD CLASS DEFINITIONS
CLASS I -CENTRAL BUSINESS DISTRICT, UNIVERSITY DISTRICT
CLASS II -ARTERIAL STREETS
CLASS III -ALL PARTIALLY OR FULL CONTROLLED ACCESS ARTERIAL STREETS.

LEGEND:

- TEMPORARY SIGN LOCATION
- TEMPORARY SIGN LOCATION (5' MIN HEIGHT)
- TRAFFIC SAFETY DRUM
- SEQUENTIAL ARROW SIGN
- TRANSPORTABLE ATTENUATOR
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- WORK AREA
- RAMP CLOSED
- TYPE 3 BARRICADE
- DETOUR ROUTE
- X — SIGN DESIGNATOR

REQUIREMENTS
* SIGNS, DEVICES AND SPACING SHALL CONFORM TO THE SEATTLE TCM/ MUTCD.
* COORDINATE/ FACILITATE DRIVEWAY/ LOAD ZONE ACCESS.
* MAINTAIN 11' VEHICLE TRAVEL LANE WIDTHS.
* MAINTAIN 4' SIDEWALK WIDTHS (8' IN THE DOWNTOWN CORE) UNLESS OTHERWISE APPROVED VIA THIS TCP. SIDEWALKS ARE EITHER OPEN OR NOT OPEN. A SIDEWALK IS CLOSED WHEN A MINIMUM OF 4' CANNOT BE MAINTAINED. PEDESTRIANS SHALL NOT BE ROUTED WITHIN 2' OF THE CURB FACE/ VEHICLE LANE EDGE.
* RESERVE CURB SPACE INCLUDING PAID PARKING W/ SDOT TRAFFIC PERMITS @ (206) 684-5086.
* PRIORITY ACCESS SHALL BE PROVIDED TO EMERGENCY VEHICLES.
* NOTIFY METRO OF BUS ROUTE/STOP IMPACTS (METRO TROLLEY COACHES SHALL NOT SHIFT MORE THAN 9' OFF CENTER OF LINES): TROLLEY 206-477-1150/ NON-TROLLEY 206-477-1140

NOTES:
1. SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.
2. EXTEND DEVICE TAPER AT L/3 ACROSS SHOULDER.
3. DEVICES SHALL NOT ENCROACH INTO THE ADJACENT LANES.
4. USE TRANSVERSE DEVICES IN CLOSED LANE EVERY 500'.
5. DEVICE SPACING FOR THE DOWNSTREAM TAPER SHALL BE 20'.
6. ALL SIGNS ARE BLACK ON ORANGE, 48"x48" UNLESS STATED OTHERWISE.
7. FOR LOCAL STREETS USE 28" REFLECTIVE CONES AT 20' SPACING INSTEAD OF DRUMS.
8. FOR SPEEDS 40 MPH OR LESS, PROTECTIVE VEHICLE CAN BE USED INSTEAD OF TRANSPORTABLE ATTENUATOR.
9. SEE DU1 - DU7 FOR DETOUR DETAILS.

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TC.dgn						
TIME	11:48:45 AM				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
DATE	3/16/2023						
PLOTTED BY	rockz				JOB NUMBER 22A049		
DESIGNED BY	Z. ROCK						
ENTERED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

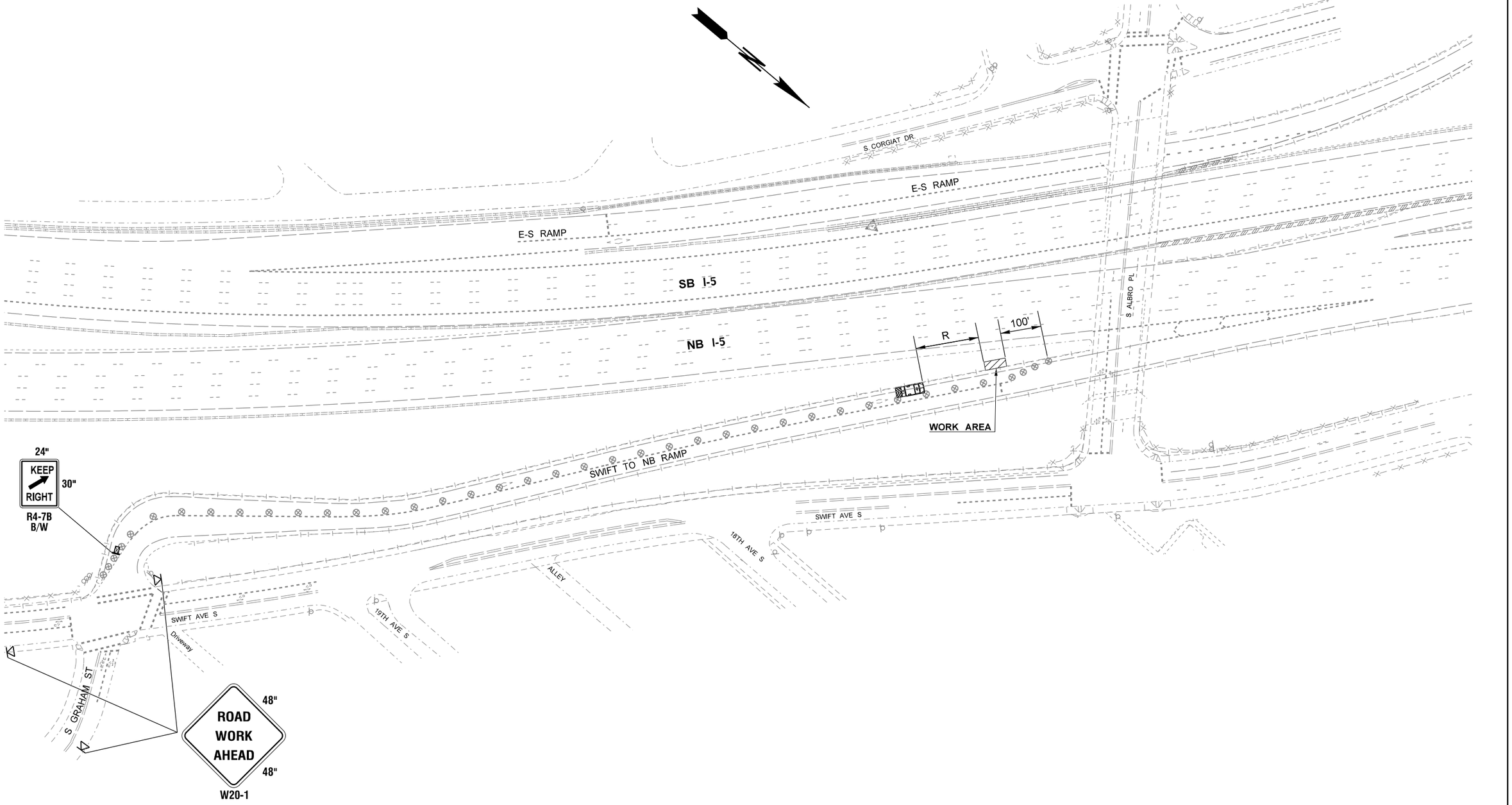
P.E. STAMP BOX — DATE

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

TRAFFIC CONTROL PLAN

Plot 1
PLAN REF NO TC1
SHEET 29 OF 43 SHEETS



NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.
2. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

SWIFT AVE S TO NB I-5 ON-RAMP HOV LANE CLOSURE

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TC.dgn				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
TIME	11:48:46 AM						
DATE	3/16/2023						
PLOTTED BY	rockz						
DESIGNED BY	Z. ROCK				JOB NUMBER 22A049		
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO				CONTRACT NO.		LOCATION NO.
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

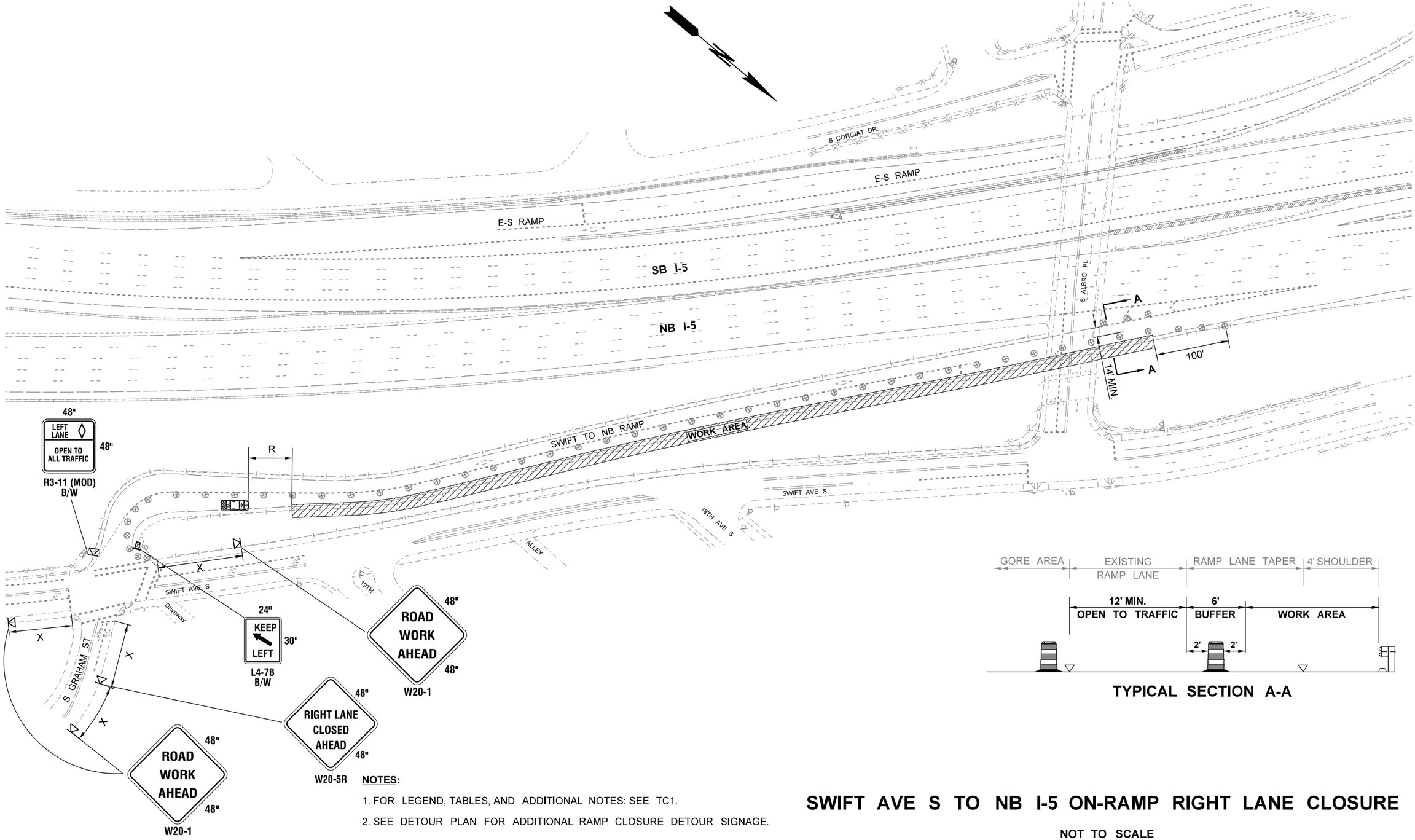
I-5
SEATTLE
ENHANCED RAMP METERING

TRAFFIC CONTROL PLAN

Plot 2

PLAN REF NO TC2

SHEET 30 OF 43 SHEETS



TYPICAL SECTION A-A

NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.
2. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

SWIFT AVE S TO NB I-5 ON-RAMP RIGHT LANE CLOSURE

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TC.dgn				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
TIME	11:48:47 AM						
DATE	3/16/2023				JOB NUMBER 22A049		
PLOTTED BY	rockz						
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

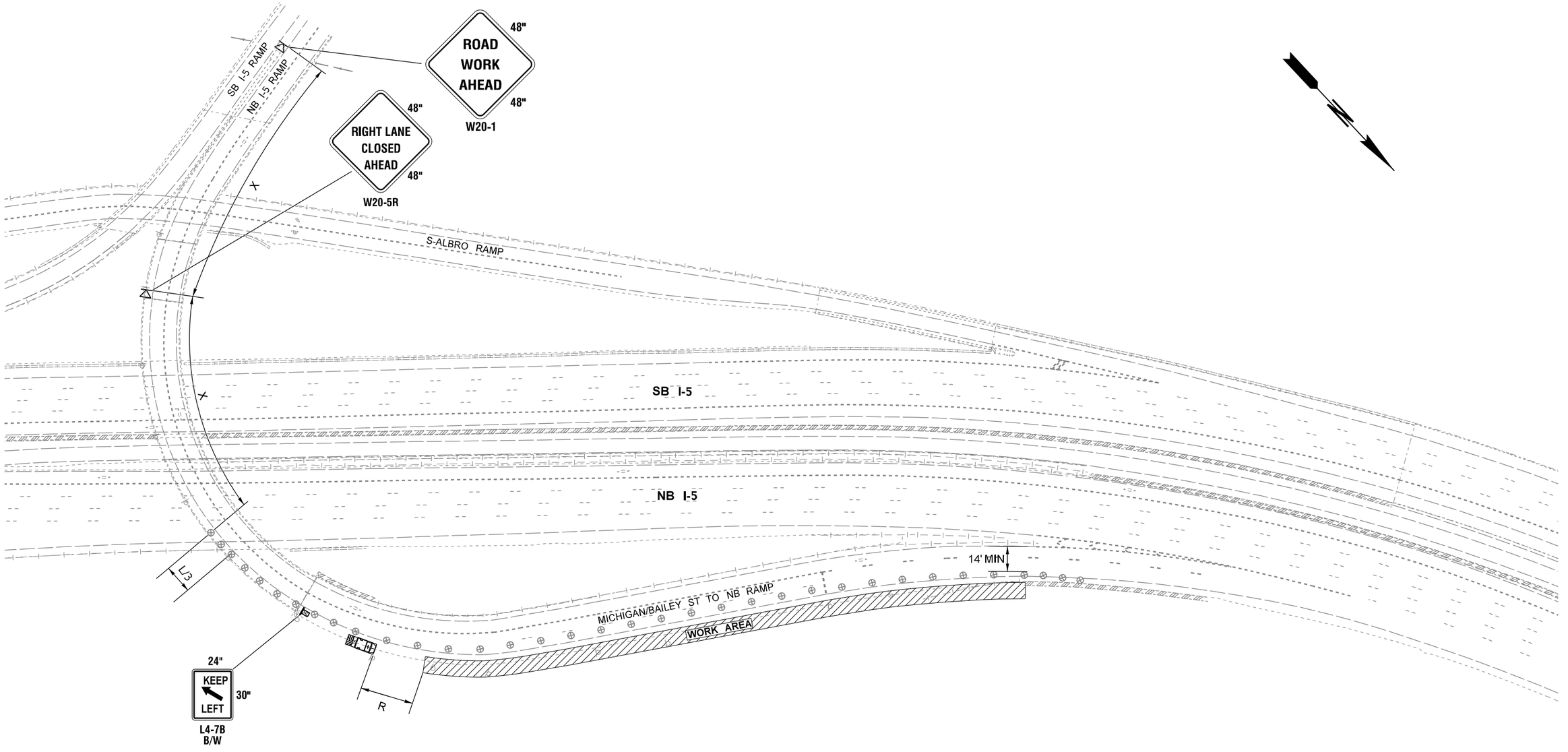
I-5
SEATTLE
ENHANCED RAMP METERING

TRAFFIC CONTROL PLAN

Plot 3

PLAN REF NO TC3

SHEET 31 OF 43 SHEETS



NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.
2. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

S MICHIGAN ST/S BAILEY ST TO NB I-5 ON-RAMP RIGHT LANE CLOSURE

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TC.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	11:48:47 AM				10	WASH	
DATE	3/16/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

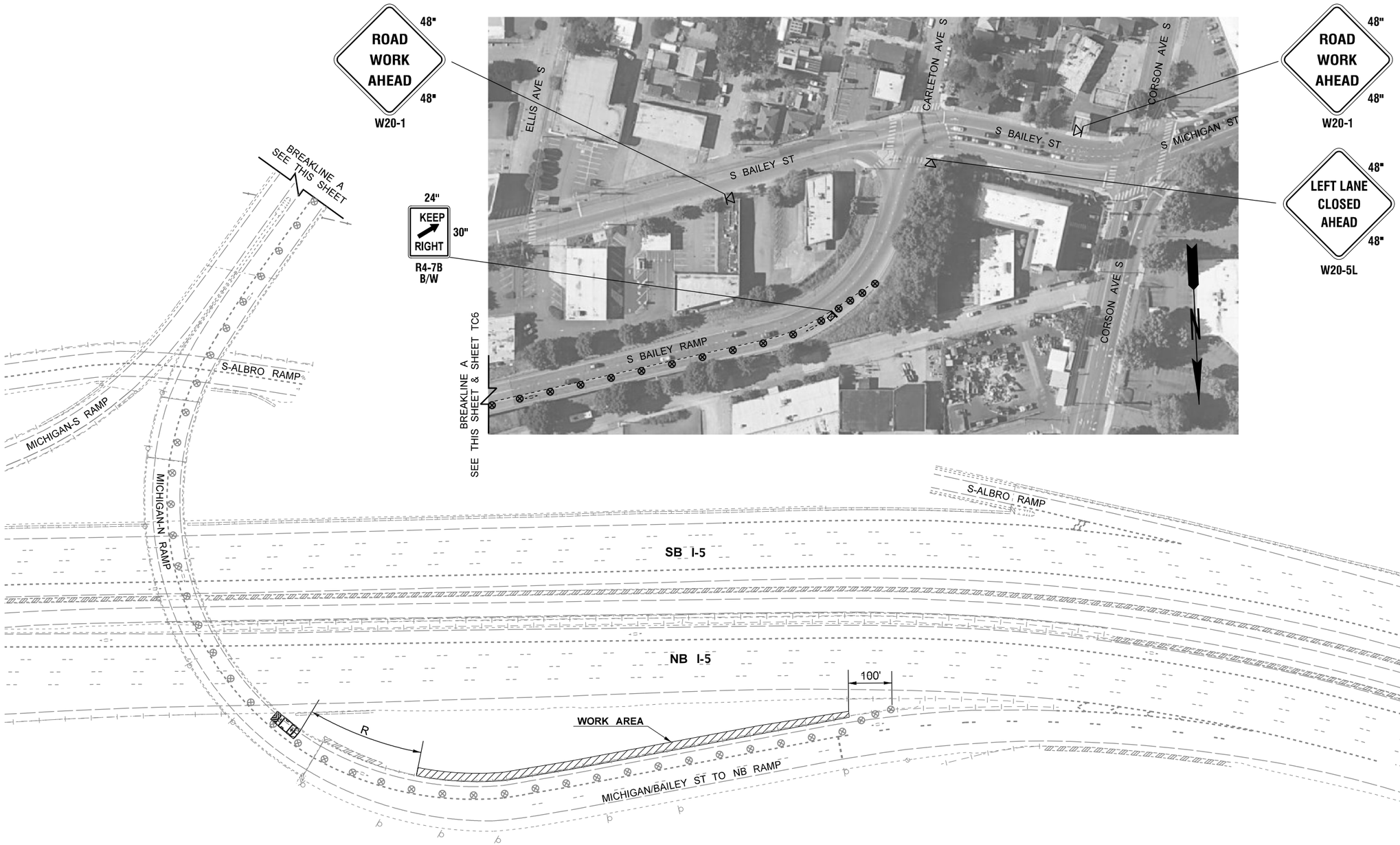
I-5
SEATTLE
ENHANCED RAMP METERING

TRAFFIC CONTROL PLAN

Plot 4

PLAN REF NO
TC4

SHEET 32 OF 43 SHEETS



NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.
2. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

S MICHIGAN ST/S BAILEY ST TO NB I-5 ON-RAMP HOV LANE CLOSURE

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TC.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	11:48:48 AM				10	WASH	
DATE	3/16/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

TRAFFIC CONTROL PLAN

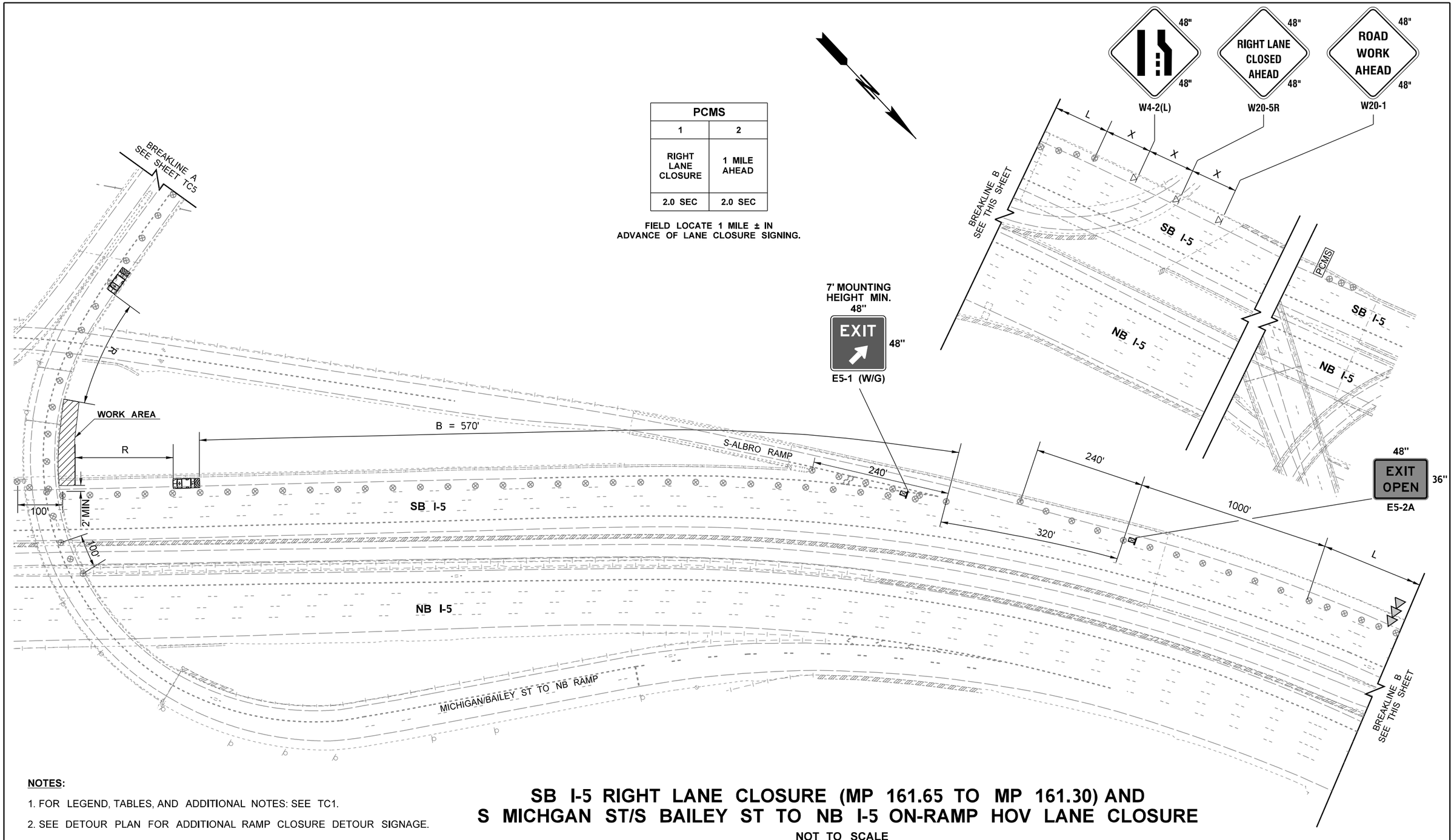
Plot 5

PLAN REF NO
TC5

SHEET 33 OF 43 SHEETS

PCMS	
1	2
RIGHT LANE CLOSURE	1 MILE AHEAD
2.0 SEC	2.0 SEC

FIELD LOCATE 1 MILE ± IN ADVANCE OF LANE CLOSURE SIGNING.



NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.
2. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

SB I-5 RIGHT LANE CLOSURE (MP 161.65 TO MP 161.30) AND S MICHIGAN ST/S BAILEY ST TO NB I-5 ON-RAMP HOV LANE CLOSURE

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TC.dgn				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
TIME	11:48:50 AM						
DATE	3/16/2023				JOB NUMBER 22A049		
PLOTTED BY	rockz				CONTRACT NO.		LOCATION NO.
DESIGNED BY	Z. ROCK						
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

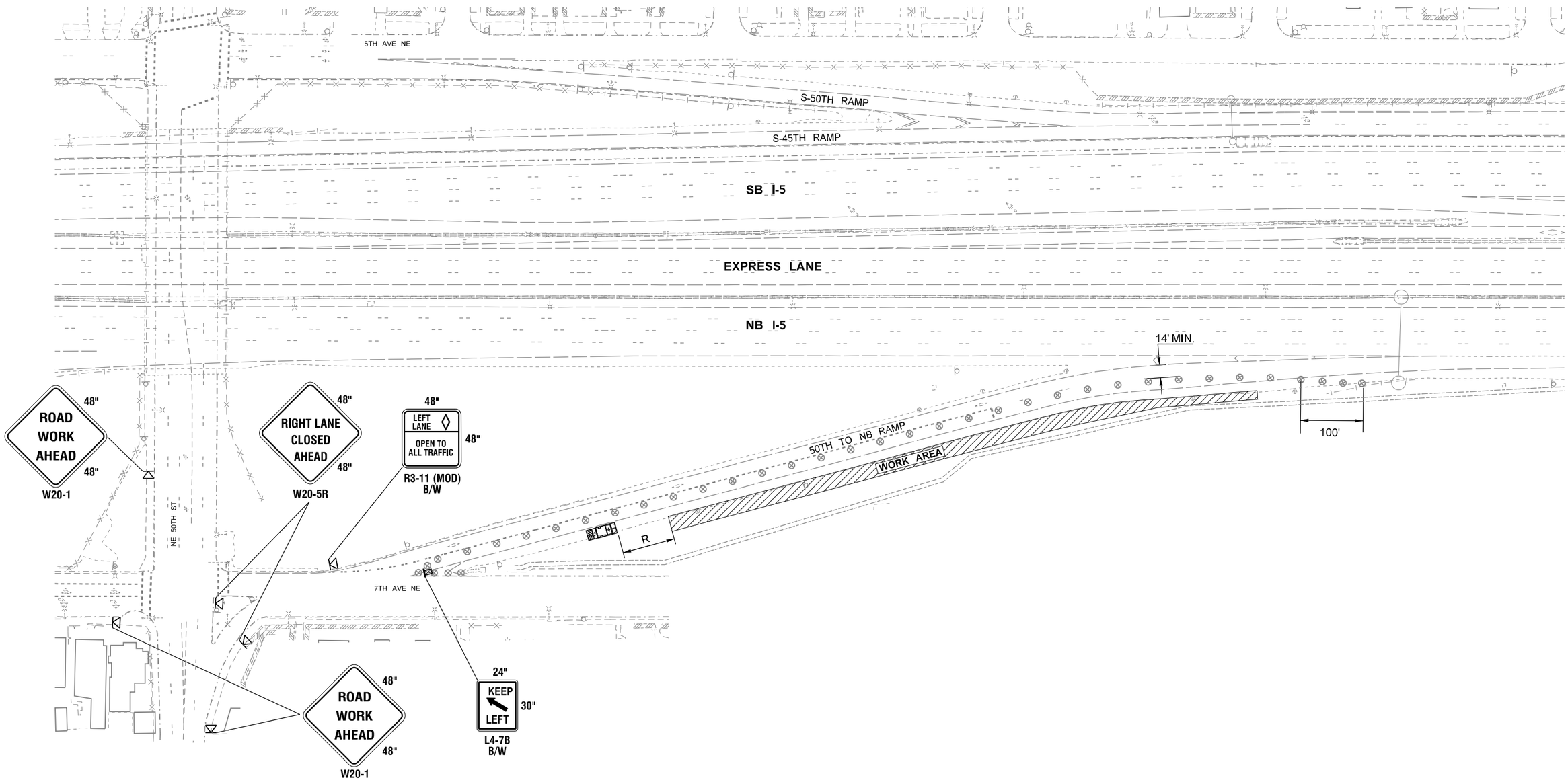
P.E. STAMP BOX — DATE

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

TRAFFIC CONTROL PLAN

Plot 6
PLAN REF NO TC6
SHEET 34 OF 43 SHEETS



NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.
2. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

NE 50TH TO NB I-5 ON-RAMP RIGHT LANE CLOSURE

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TC.dgn				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
TIME	11:48:51 AM						
DATE	3/16/2023				JOB NUMBER 22A049		
PLOTTED BY	rockz						
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

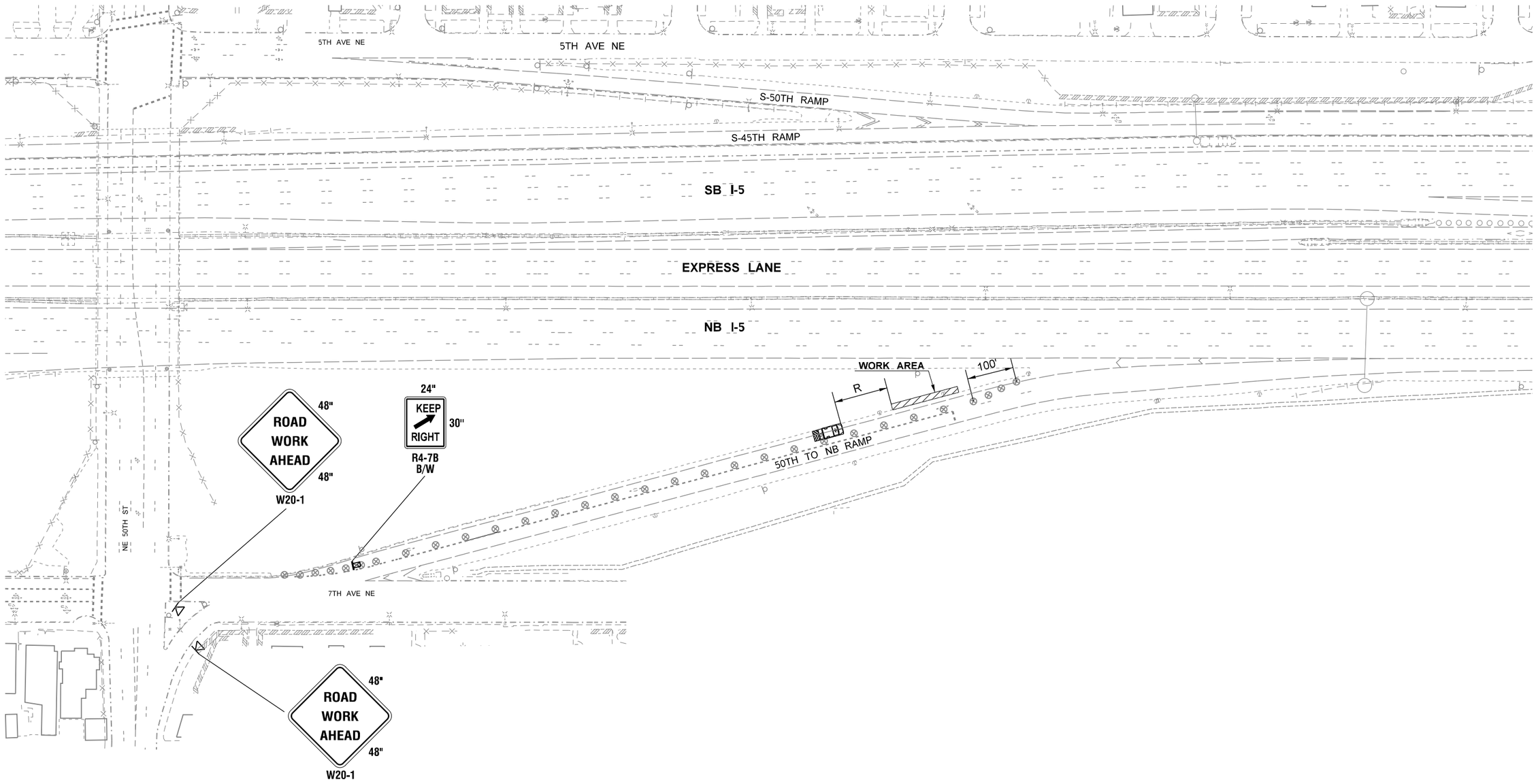
I-5
SEATTLE
ENHANCED RAMP METERING

TRAFFIC CONTROL PLAN

Plot 7

PLAN REF NO TC7

SHEET 35 OF 43 SHEETS



NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.
2. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

NE 50TH TO NB I-5 ON-RAMP HOV LANE CLOSURE

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TC.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	11:48:52 AM				10	WASH	
DATE	3/16/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

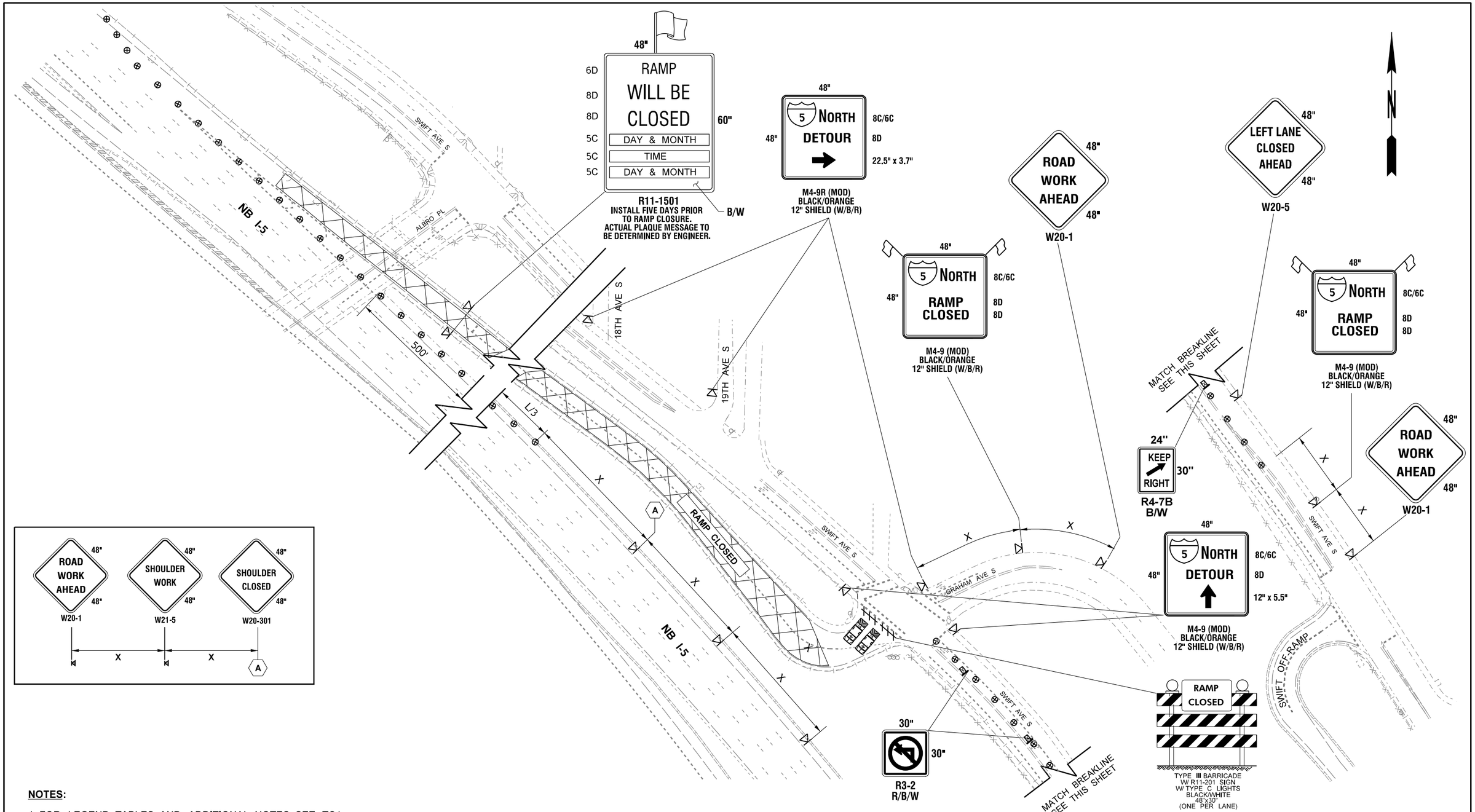
I-5
SEATTLE
ENHANCED RAMP METERING

TRAFFIC CONTROL PLAN

Plot 8

PLAN REF NO
TC8

SHEET 36 OF 43 SHEETS



NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.
2. FOR DETOUR, SEE SHEET DU2.

SWIFT AVE S TO NB I-5 ON-RAMP CLOSURE

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TCDU.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	11:49:11 AM				10	WASH	
DATE	3/16/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

DATE
P.E. STAMP BOX

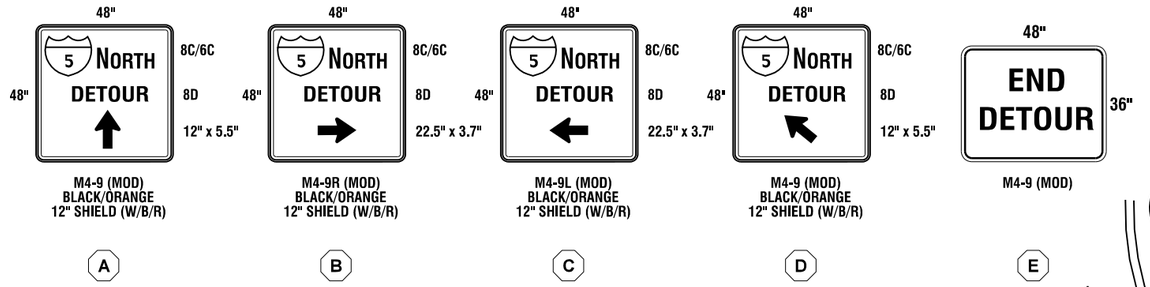
DATE
P.E. STAMP BOX

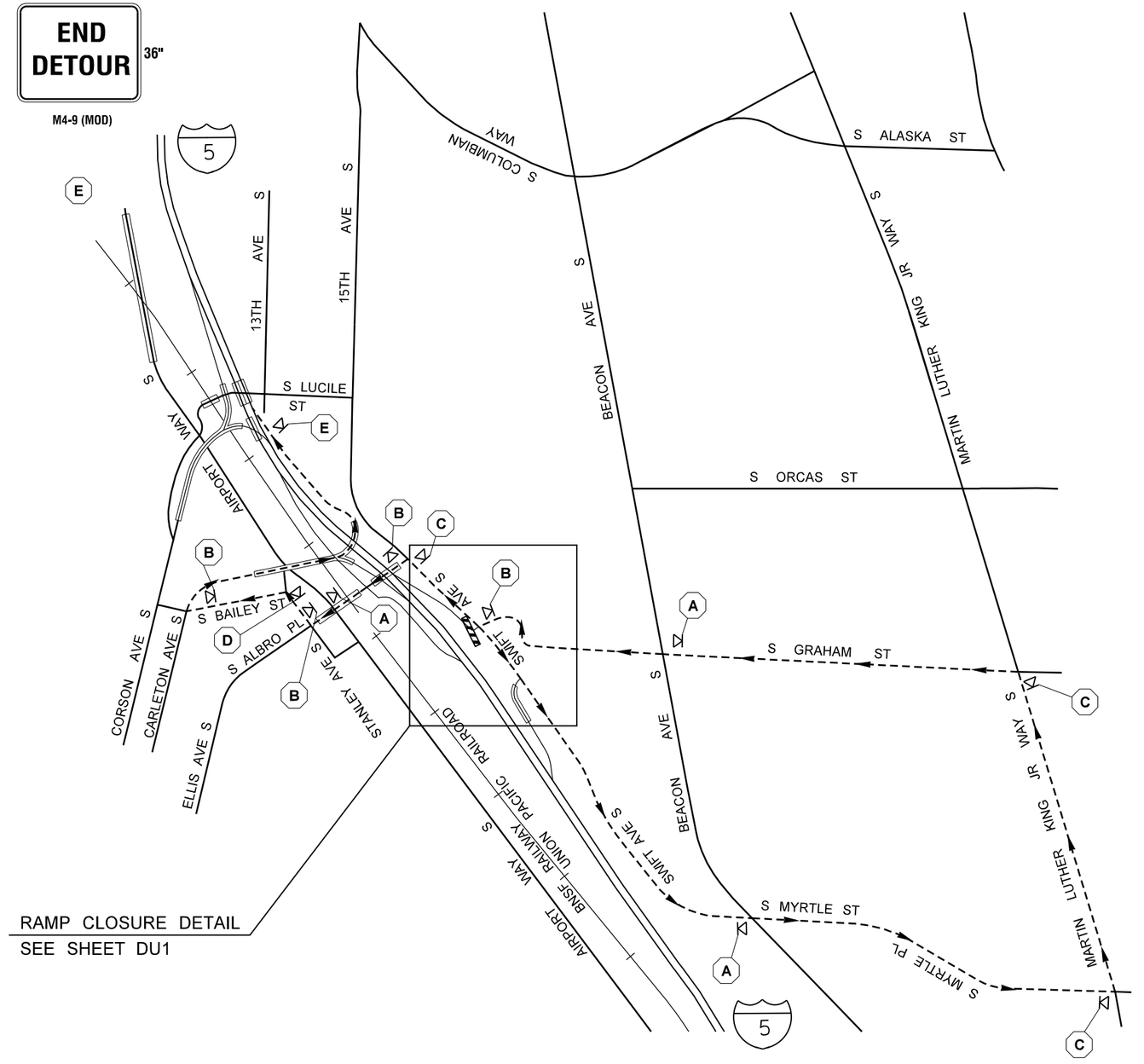
Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

DETOUR PLAN

Plot 1
PLAN REF NO
DU1
SHEET 37 OF 43 SHEETS





RAMP CLOSURE DETAIL
SEE SHEET DU1

NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.

SWIFT AVE S TO NB I-5 ON-RAMP CLOSURE DETOUR

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TCDU.dgn						
TIME	11:49:12 AM				REGION NO. 10	STATE WASH	FED.AID PROJ.NO.
DATE	3/16/2023						
PLOTTED BY	rockz				JOB NUMBER 22A049		
DESIGNED BY	Z. ROCK						
ENTERED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

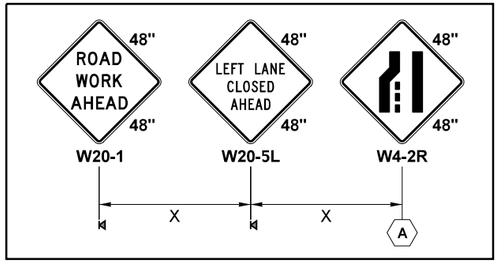
I-5
SEATTLE
ENHANCED RAMP METERING

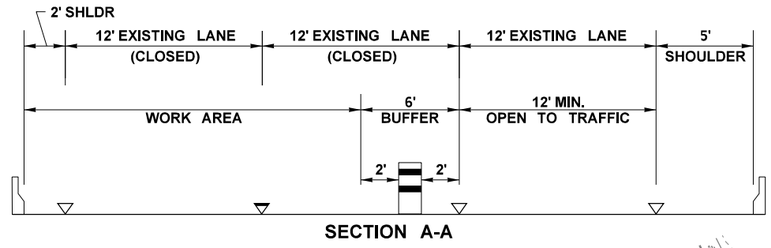
DETOUR PLAN

Plot 2

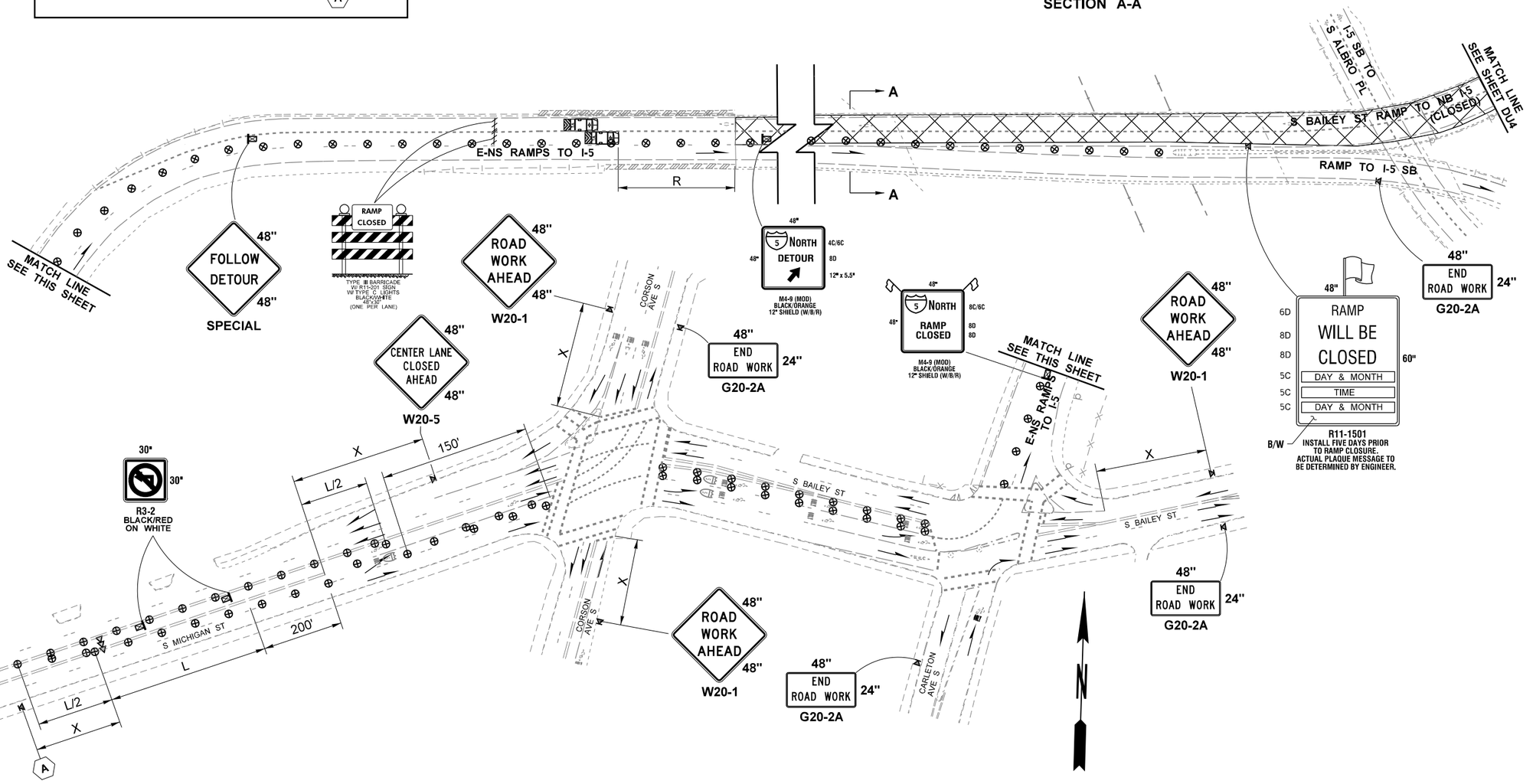
PLAN REF NO
DU2

SHEET 38 OF 43 SHEETS





SECTION A-A



NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.
2. FOR DETOUR, SEE SHEET DU5.

S MICHIGAN ST/S BAILEY ST TO NB I-5 ON-RAMP CLOSURE DETAIL

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TCDU.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	11:49:13 AM				10	WASH	
DATE	3/16/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

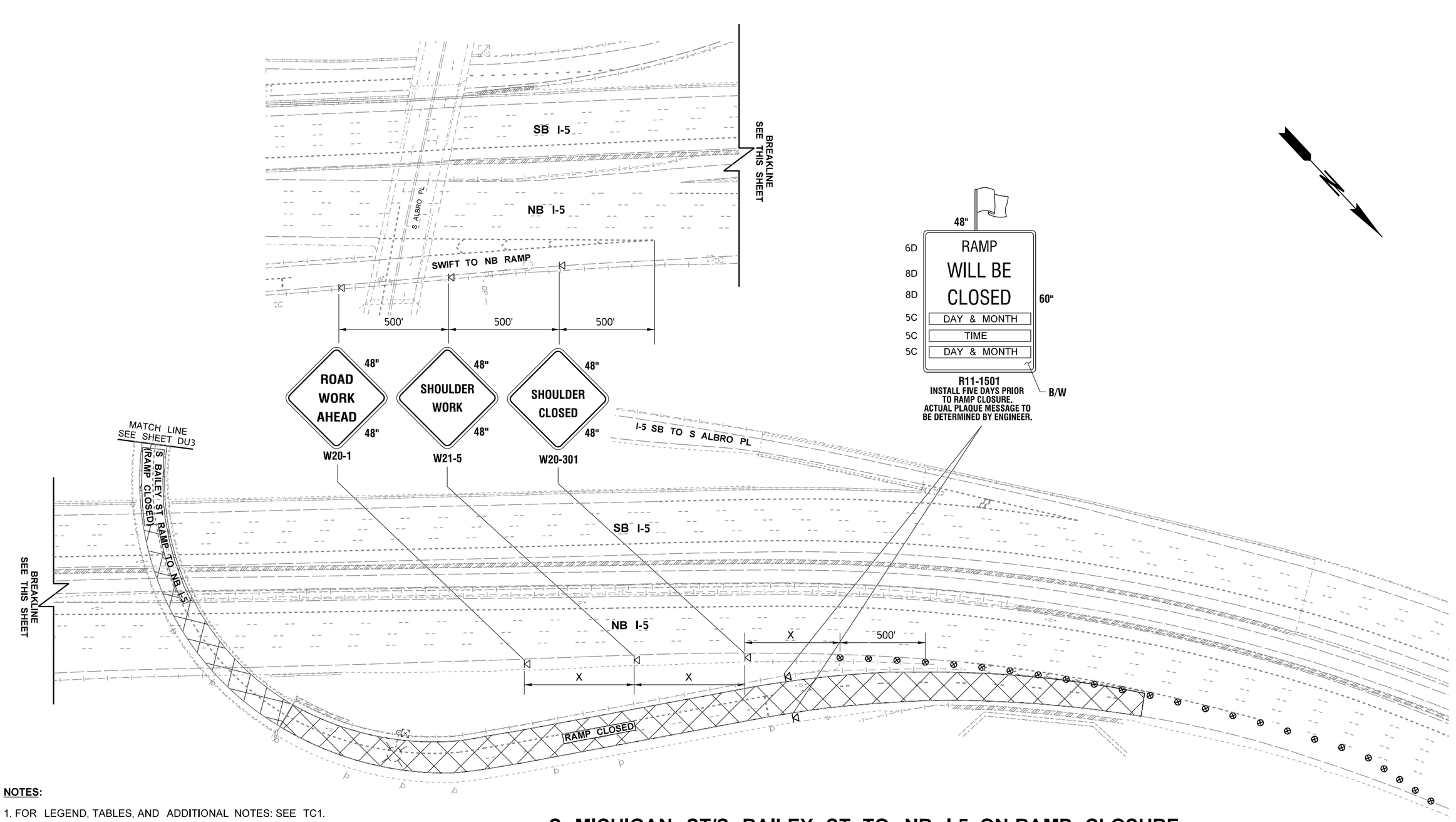
I-5
SEATTLE
ENHANCED RAMP METERING

DETOUR PLAN

Plot 3

PLAN REF NO
DU3

SHEET 39 OF 43 SHEETS



NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.
2. FOR DETOUR, SEE SHEET DU5.

S MICHIGAN ST/S BAILEY ST TO NB I-5 ON-RAMP CLOSURE

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TCDU.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	11:49:14 AM				10	WASH	
DATE	3/16/2023						
PLOTTED BY	rockz				JOB NUMBER		
DESIGNED BY	Z. ROCK						
ENTERED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

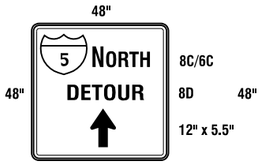
I-5
SEATTLE
ENHANCED RAMP METERING

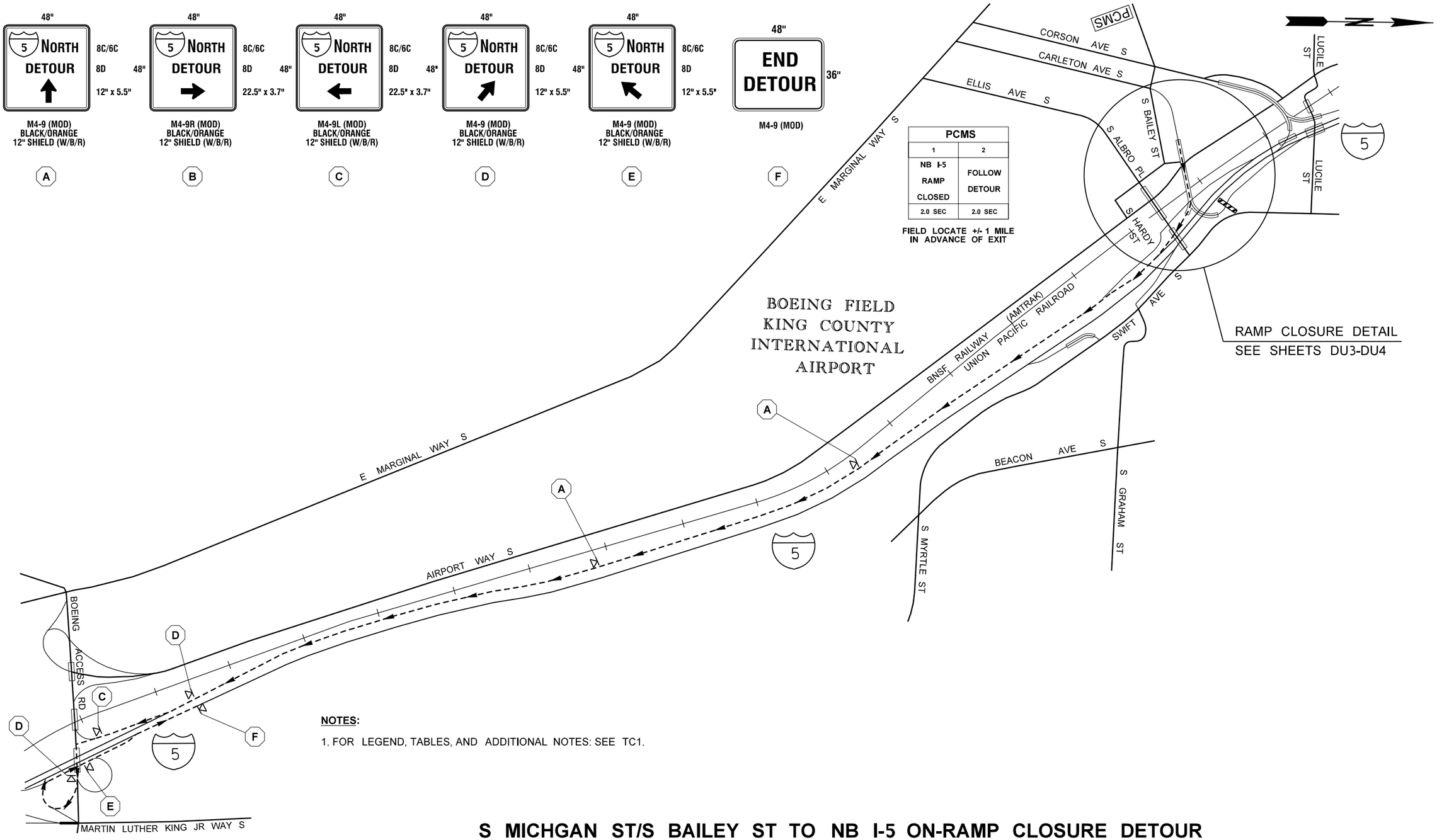
DETOUR PLAN

Plot 4

PLAN REF NO
DU4

SHEET 40 OF 43 SHEETS





NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.

S MICHIGAN ST/S BAILEY ST TO NB I-5 ON-RAMP CLOSURE DETOUR

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TCDU.dgn				REGION NO. / STATE	FED.AID PROJ.NO.	Plot 5
TIME	11:49:15 AM				10 WASH		PLAN REF NO DU5
DATE	3/16/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		SHEET 41 OF 43 SHEETS
DESIGNED BY	Z. ROCK				CONTRACT NO.	LOCATION NO.	
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

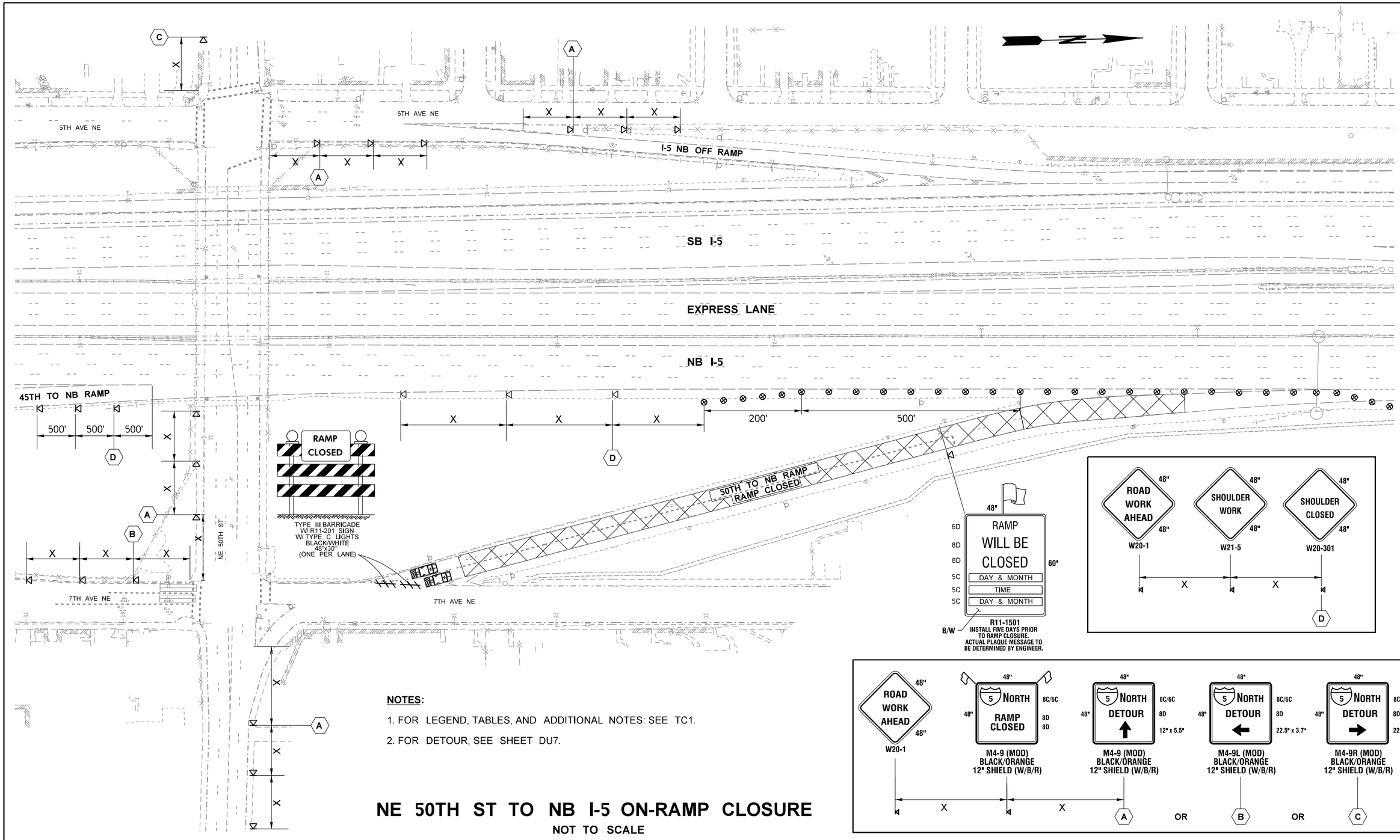
P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

DETOUR PLAN



NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.
2. FOR DETOUR, SEE SHEET DU7.

NE 50TH ST TO NB I-5 ON-RAMP CLOSURE

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TCDU.dgn				REGION NO. 10	STATE WASH
TIME	11:49:14 AM				JOB NUMBER 22A049	FED.AID PROJ.NO.
DATE	3/16/2023				CONTRACT NO.	LOCATION NO.
PLOTTED BY	rockz					
DESIGNED BY	Z. ROCK					
ENTERED BY	Z. ROCK					
CHECKED BY	C. WOO					
PROJ. ENGR.	C. SANTIAGO					
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY		

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

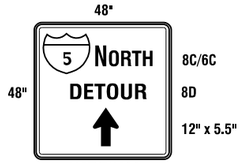
I-5
SEATTLE
ENHANCED RAMP METERING

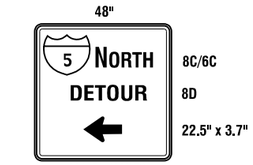
DETOUR PLAN

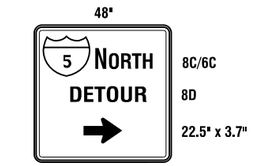
Plot 6

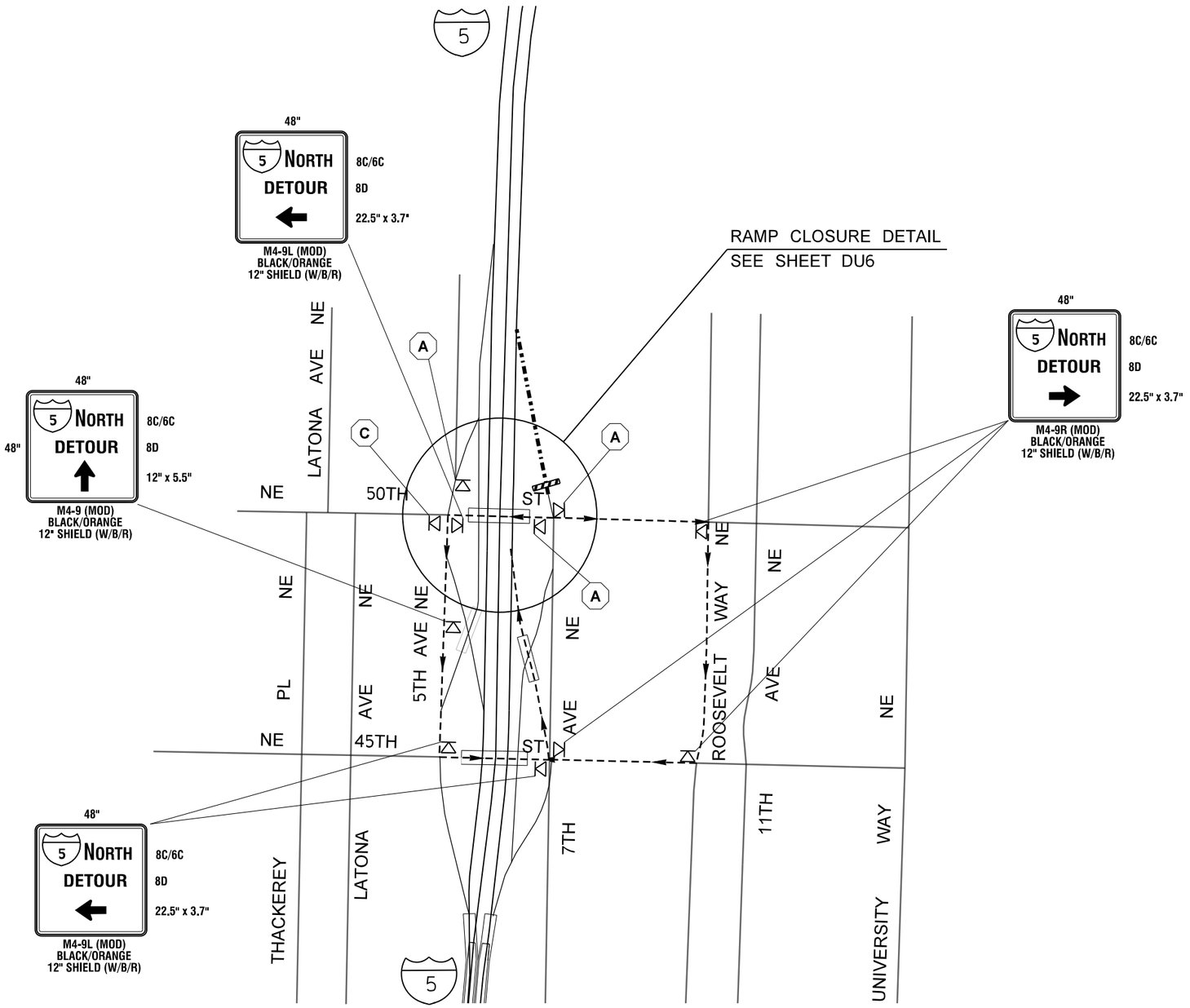
PLAN REF NO DU6

SHEET 42 OF 43 SHEETS









NOTES:

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC1.

NE 50TH ST TO NB I-5 ON-RAMP CLOSURE DETOUR

NOT TO SCALE

FILE NAME	T:\414121\Traffic Design_PROJECTS\SR 005\I-5_Seattle - Enhanced Ramp Metering\CAD_Plansheets\XL6542_PS_TCDU.dgn				REGION NO.	STATE	FED.AID PROJ.NO.
TIME	11:49:16 AM				10	WASH	
DATE	3/16/2023				JOB NUMBER		
PLOTTED BY	rockz				22A049		
DESIGNED BY	Z. ROCK				CONTRACT NO.		LOCATION NO.
ENTERED BY	Z. ROCK						
CHECKED BY	C. WOO						
PROJ. ENGR.	C. SANTIAGO						
REGIONAL ADM.	B. NIELSEN	REVISION	DATE	BY			

DATE
P.E. STAMP BOX

DATE
P.E. STAMP BOX

Washington State Department of Transportation

I-5
SEATTLE
ENHANCED RAMP METERING

DETOUR PLAN

Plot 7

PLAN REF NO
DU7

SHEET 43 OF 43 SHEETS

22A049 Ad Copy Plans

Final Audit Report 2023-03-28

Created:	2023-03-27
By:	Darlene Sharar (ShararD@wsdot.wa.gov)
Status:	Signed
Transaction ID:	CBJCHBCAABAA0VG4DLsAXKx6HieHUPq-GqgrhlaWeMg1

"22A049 Ad Copy Plans" History

Document created by Darlene Sharar (ShararD@wsdot.wa.gov)
2023-03-27 - 8:13:26 PM GMT- IP address: 198.238.213.155

Document emailed to Christian Santiago (santiac@wsdot.wa.gov) for signature
2023-03-27 - 8:15:14 PM GMT

Email viewed by Christian Santiago (santiac@wsdot.wa.gov)
2023-03-27 - 8:23:09 PM GMT- IP address: 104.47.65.254

Document e-signed by Christian Santiago (santiac@wsdot.wa.gov)
Signature Date: 2023-03-27 - 8:24:27 PM GMT - Time Source: server- IP address: 198.238.213.147

Document emailed to forbism@wsdot.wa.gov for signature
2023-03-27 - 8:24:33 PM GMT

Email viewed by forbism@wsdot.wa.gov
2023-03-28 - 1:57:38 PM GMT- IP address: 104.47.64.254

Signer forbism@wsdot.wa.gov entered name at signing as Michael Forbis
2023-03-28 - 1:58:13 PM GMT- IP address: 164.110.11.170

Document e-signed by Michael Forbis (forbism@wsdot.wa.gov)
Signature Date: 2023-03-28 - 1:58:15 PM GMT - Time Source: server- IP address: 164.110.11.170

Agreement completed.
2023-03-28 - 1:58:15 PM GMT

Names and email addresses are entered into the Acrobat Sign service by Acrobat Sign users and are unverified unless otherwise noted.

Adobe Acrobat Sign